

**CRYPTOCURRENCIES: OVERSIGHT OF NEW
ASSETS IN THE DIGITAL AGE**

HEARING

BEFORE THE

**COMMITTEE ON AGRICULTURE
HOUSE OF REPRESENTATIVES**

ONE HUNDRED FIFTEENTH CONGRESS

SECOND SESSION

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CRYPTOCURRENCIES: OVERSIGHT OF NEW ASSETS IN THE DIGITAL AGE

WEDNESDAY, JULY 18, 2018

HOUSE OF REPRESENTATIVES,
COMMITTEE ON AGRICULTURE,
Washington, D.C.

The Committee met, pursuant to call, at 10:01 a.m., in Room 1300 of the Longworth House Office Building, Hon. K. Michael Conaway [Chairman of the Committee] presiding.

Members present: Representatives Conaway, Thompson, Goodlatte, Lucas, King, Gibbs, Austin Scott of Georgia, Hartzler, LaMalfa, Davis, Yoho, Allen, Bost, Rouzer, Abraham, Kelly, Comer, Marshall, Bacon, Faso, Arrington, Peterson, David Scott of Georgia, Costa, McGovern, Vela, Lujan Grisham, Kuster, Nolan, Plaskett, Adams, Evans, Lawson, O'Halleran, Panetta, Soto, and Blunt Rochester.

Staff present: Darryl Blakey, Mindi Brookhart, Paul Balzano, Rachel Millard, Matthew MacKenzie, Patrick Delaney, Troy Phillips, Nicole Scott, and Carly Reedholm.

OPENING STATEMENT OF HON. K. MICHAEL CONAWAY, A REPRESENTATIVE IN CONGRESS FROM TEXAS

The CHAIRMAN. Good morning, everyone. This hearing of the Committee on Agriculture entitled, *Cryptocurrencies: Oversight of New Assets in the Digital Age*, will come to order. Please join me in a quick prayer.

Heavenly Father, we ask you, Lord, for blessings on this meeting this morning. We have some things to understand that are new and different, and we have great panelists to visit with us this morning. I also want to lift up Collin Peterson and his family during these times, bittersweet, and your thoughts and prayers with him as well. Help us to do your will and be the kind of people that will honor you. We ask these things in Jesus' name. Amen.

Just a quick word. Collin Peterson's 98½ year old father passed this week, and this is bittersweet. But he was telling me a wonderful story that his dad apparently had his faculties right up until the very end, which is pretty darn good. Our thoughts are with you, Collin.

Mr. PETERSON. He was hanging in there. He could remember the crop prices from 1952. He knew everything.

The CHAIRMAN. Yes, all right.

Well good morning. We have a terrific panel this morning. I see a lot of new faces in the audience today. One of the big questions on a lot of folks' mind is what is the Agriculture Committee doing

with cryptocurrency, and the distributive ledger technology, but we are here to find that out this morning.

For those of you who have not joined us before, welcome. We are happy to have you as we discuss an emerging policy area that is of deep interest to our Members, to the emerging crypto-industry, and, we hope, to Americans of all stripes.

Digital assets like Bitcoin and Ether, but also hundreds of other token-based projects that are being developed, represent a new way for people to interact and exchange in commerce with one another. While digital assets are often thought of as *payment systems* or *digital gold*, I believe the promise that token networks hold is more universal and more exciting, quite frankly, than that.

For the first time, we have a tool that enables individuals to reliably exchange value in a digital realm without an intermediary. We can have assets that exist and can be created, exchanged, and consumed in digital form. The promise of being able to secure property rights in a digital space may fundamentally change how people interact with one another. This technology holds the potential to bring enormous benefits to each of us, if we are willing to give it the space to grow.

Providing a strong, clear, legal and regulatory framework for digital assets is essential. To that end, there are several questions before us about how laws should govern the issuance, trade, and utilization of these digital assets.

Perhaps no question has generated greater uncertainty than how to determine if a particular token is a security. What to do if a commonly traded asset is, in fact, deemed a security. We simply apply the securities laws. If it is not a security, there is a good chance it is a commodity, which would be subject to the requirements of the Commodity Exchange Act.

The problem seems to be in making that determination. The *Howey* Test, which concerns the sale of orange groves and service contracts in the 1940s, is often presented as the standard test to determine if the securities laws govern a token, yet they have proved challenging to analyze under this test.

A related question is whether or not current laws are appropriate for these new digital assets. If a token is determined to be a security or a commodity or something else, our regulatory regime need not be static. If it is necessary, Congress and regulators may want to consider developing a new framework that takes into account the diverse characteristics and unique economic relationships embedded in many of the types of digital assets that can be represented by tokens.

Providing clear guidance to enable developers to determine the nature of their token and then suitable rules to enable them to develop their project, is essential to both protecting the public and promoting innovation. How we regulate these products and those who develop them won't determine if they are developed or used, but it will determine where they are developed and used, and we want that innovation done in our country.

As we consider changes to the laws or new regulations, the Committee on Agriculture will be a part of that conversation. Within the House, we have a vested interest in the definition of a *security*, because it directly impacts the definition of a *commodity*.

Similar to our work in agricultural commodities, as well as futures and swaps markets, the Committee has a strong interest in promoting safe, efficient and transparent markets for those who use these new token markets. Properly regulated markets promote innovation and foster economic growth, and I don't believe that will be any different with respect to digital assets. Of course, *proper regulation* does not mean *intrusive regulation*. It means regulation appropriate to the nature of the activities and the participants, and in some cases, it might mean no regulation at all.

Before I turn to our Ranking Member, I want to thank all of our witnesses for making the time to prepare and testify. We have an incredibly qualified panel to present all sides of a fascinating and complex set of issues. I am pleased to welcome each one of you here today for this conversation.

[The prepared statement of Mr. Conaway follows:]

PREPARED STATEMENT OF HON. K. MICHAEL CONAWAY, A REPRESENTATIVE IN
CONGRESS FROM TEXAS

Good morning. I see a lot of new faces today as we tackle a cutting-edge topic for the Committee: digital assets.

For those of you who have not joined us before, welcome. We are happy to have you as we discuss an emerging policy area that is of deep interest to our Members, to the emerging cryptocurrency industry, and . . . we hope . . . to Americans of all stripes.

Digital assets like Bitcoin and Ether, but also like hundreds of other token-based projects that are being developed, represent a new way for people to interact and engage in commerce with one another. While digital assets are often thought of as "payment systems" or "digital gold" I believe the promise that token networks hold is more universal—and more exciting—than that.

For the first time, we have a tool that enables individuals to reliably exchange value in the digital realm, without an intermediary. We can have assets that exist—and can be created, exchanged, and consumed—in digital form. The promise of being able to secure property rights in a digital space may fundamentally change how people interact with one another. This technology holds the potential to bring enormous benefits to each of us, if we are willing to give it the space to grow.

Providing a strong, clear legal and regulatory framework for digital assets is essential. To that end, there are several questions before us about how laws should govern the issuance, trade, and utilization of *digital* assets.

Perhaps no question has generated greater uncertainty than how to determine if a particular token is a security. We generally know what to do if a commonly traded asset is deemed a security—we apply the securities laws. And if it is not a security, there is a good chance it's a commodity and subject to the requirements of the Commodity Exchange Act.

The problem seems to be in making that determination. The *Howey* Test, which concerns the sale of orange groves and service contracts in the 1940s, is often presented as the standard test to determine if the securities laws govern a token, yet they have proved challenging to analyze under the test.

A related question is whether or not the current laws are *appropriate* for these new digital assets. If a token is determined to be a security or a commodity or something else, our regulatory regime need not be static. If it's necessary, Congress and regulators may want to consider developing a new framework that takes into account the diverse characteristics and unique economic relationships embedded in the many types of digital assets that can be represented by tokens.

Providing clear guidance to enable developers to determine the nature of their token and then suitable rules to enable them to develop their project, is essential to both protecting the public and promoting innovation. How we regulate these products and those who develop them won't determine if they are developed and used, but it will determine if they are developed and used **in our country**.

As we consider changes to the law or new regulations, the Committee on Agriculture will be a part of the conversation. Within the House, we have a vested interest in the definition of a security, because it directly impacts the definition of a commodity.

Similar to our work in agricultural commodities, as well as futures and swaps markets, the Committee has a strong interest in promoting safe, efficient, and transparent markets for those who use these new token markets. Properly regulated markets promote innovation and foster economic growth, and I don't believe that will be any different with digital assets. Of course, "proper regulation" does not mean "intrusive regulation." It means, regulation appropriate to the nature of the activities and the participants, and in some cases, it might even mean no regulation at all.

Before I turn to our Ranking Member, I want to thank all of our witnesses for making the time to prepare and testify. We have an incredibly qualified panel to present all sides of a fascinating and complex set of issues. I am pleased to welcome you all, and I look forward to our conversation today.

The CHAIRMAN. With that, Collin, I will turn to you for any comments that you might want to add.

**OPENING STATEMENT OF HON. COLLIN C. PETERSON, A
REPRESENTATIVE IN CONGRESS FROM MINNESOTA**

Mr. PETERSON. Thank you, Mr. Chairman, and thanks to all of you for joining us here today.

I am happy that we have a chance to review this new technology in our role to oversee the CFTC regulation of it, if appropriate.

As a CPA and someone who spent a career helping folks run the numbers on their finances, I am still having a hard time getting my hands around this, and I have some real concerns.

One aspect of cryptocurrency that we need to pay special attention to is its volatility. There are some of you that will tell us that the fluctuations in cryptocurrency are a good thing, and part of its appeal. But the increased speculation and the fact that regular investors stand to lose their shirts gives me a great deal of concern.

As one study found, over 80 percent of the initial coin offerings are scams. While regular investors stand to lose, a very small amount stand to gain. For example, 97 percent of Bitcoin is held by just four percent of addresses.

There are a lot of things here that don't make much sense to me, and who knows? Maybe some type of this technology will come along and really make a difference after these starts and fits, but as it stands right now, I am skeptical. It is our job to be the adults in the room and to ensure that in these early days, there is enough oversight of this new frontier to ensure that it can grow responsibly.

With that, I look forward to your testimony, and I yield back.

The CHAIRMAN. Thank you, Mr. Peterson.

The chair would request other Members submit their opening statements for the record so that our witnesses may begin their testimony, and to ensure there is ample time for questions.

I now would like to welcome our witnesses to our table. First off we have Mr. Joshua Fairfield, the William Donald Bain Family Professor of Law, Washington and Lee University School of Law in Staunton, Virginia.

We have Ms. Amber Baldet, Co-Founder and CEO of Clovyr in New York, New York.

We have Scott Kupor, Managing Partner of Andreessen Horowitz, Menlo Park, California.

We have Mr. Daniel Gorfine, Director, LabCFTC and Chief Innovation Officer at the CFTC here in Washington, D.C.

We are welcoming back for another round of conversations the Honorable Gary Gensler, who currently is a Senior Lecturer, MIT Sloan School of Management, and then we have Mr. Lowell Ness, Managing Partner, Perkins Coie, Palo Alto, California.

We have a terrific panel, and with that, we will go to Mr. Fairfield.

Everybody will have 5 minutes to pitch your wares, and we also have your full statements for the record.

So with that, Mr. Fairfield, you are recognized.

STATEMENT OF JOSHUA A.T. FAIRFIELD, J.D., WILLIAM DONALD BAIN FAMILY PROFESSOR OF LAW, WASHINGTON AND LEE UNIVERSITY SCHOOL OF LAW, STAUNTON, VA

Mr. FAIRFIELD. Thank you, Chairman Conaway, Ranking Member Peterson, and Members of the Committee for the opportunity to address you today.

My remarks are going to try to set some context, and they are organized around two questions. We have heard a lot about securities and commodities, but how are people actually using cryptocurrency tokens? And given that, how should regulators proceed?

On the first question, blockchain, which is the technology underlying the current rash of cryptocurrency and tokens, is a new decentralized database technology. Many communities have formed just to see what the technology can do, and they are trying different experiments. The potential value in these experiments is considerable. Collaborative communities of artists, new forms of corporations, fast and low cost check settlement, digitization of securities, open and low cost electronic mortgage and secured transactions filing systems, secure international remittances, voting systems, and many more are possible applications of the technology.

My testimony today will focus on potential for blockchain technology to expand personal property rights online. This is my primary area of research, and my conclusions are—and I will continue them below—that first, citizens need and want an expansion of personal property rights online. The cryptocurrency tokens are helping them do that by solving important problems in building markets for digital property and that we need to be cautious when regulating overlapping spaces and use cases, such as systems in which most people hold a token to use it or consume it, and that few hold it to speculate on the price.

On the second question, how do we go about conducting oversight? Common sense construction of how groups are using the technology, a so-called duck test, will help regulators begin to sort out whether and where to engage. Rough agency consensus can handle these conflicts, and hearings such as this one are critically important for regulators to start working out the overlaps because many, many more applications of this technology are coming.

In the body of my remarks, I would like to discuss how this technology represents a badly needed expansion for personal property rights online. We should really care about good property rules for intangible electronic digital assets. Good property rules preserve citizen independence. Property institutions build individual wealth and social welfare by reducing transaction costs, and property per-

mits us to express ourselves by changing and arranging our environment to reflect what we want. Here you might think of your own home or your wedding ring, for example.

But personal property rights like this have had serious trouble coming online. We just don't own that much personal property online. Consider that people used to have record collections. Now they have a subscription to Spotify. People used to have bookshelves. Now they have Kindle accounts. This is because early in the history of the Internet, intellectual property holders were worried about illegal copying. It took several decades to develop a technology, blockchain, the database technology underneath cryptocurrency tokens, that can be traded, held, bought, and sold but not duplicated. So far until now, property institutions haven't really gotten the benefit of Internet technologies because it is too costly to record all the transactions. We can't have a database of ownership for every Barbie doll in the entire country, right? It is too costly. However, token systems can and will reshape all of these ways of owning if they push price points low enough the way the Internet did for basic Internet communications.

In sum, blockchain technology is not just used as a security. It is not just used as a commodity. It is used as a way to unstick personal property law for all of us online. But it is only going to do it if we let it.

What is the path to successful oversight? Responsible regulation has to rest on a frank and common sense determination of how people are using this technology. Working out the jurisdictional questions is going to be time consuming, but it is not particularly harder than for network communications technology. Generally we have just had to hand these things out and figure it out.

Tokens do present some challenge. Specifically, they may be used in different ways by different members of a community. They may be used at different times in different ways, but most importantly, the nature of the use by a community can shift. A community can be trying to do something entirely legitimate and have speculators come in and begin to disrupt the purpose of the original community.

The current hot characterization debate is whether token sales ought to be deemed regulable under the *Howey* test. I believe instead the *Howey* test represents the outer bound of where we should look. We should look inside that outer bound to figure out what the beneficial and damaging uses of the technology are. If a community is using cryptocurrency tokens like securities, then they should be regulated as securities. But if they are not, they shouldn't, and that is the most important addition.

In conclusion, blockchain technology has enabled new communities and new business forms. It has also provided the technological basis for a badly needed expansion of personal property rights online, and for purposes of regulatory jurisdiction, a rough common sense sorting into buckets will do more good in the near term than precise definitions of what a cryptocurrency token is. That is a lost cause. A cryptocurrency token wears as many hats as humans give it. It is an entry in a database. It is a technological entry and nothing more.

In the current characterization debate, what this means is that a token should be deemed a security when it operates like a security, a commodity when it operates like a commodity, a currency when it operates as a currency, and as a simple property interest when it operates as a simple property interest.

Thank you so much.

[The prepared statement of Mr. Fairfield follows:]

PREPARED STATEMENT OF JOSHUA A.T. FAIRFIELD, J.D., WILLIAM DONALD BAIN
FAMILY PROFESSOR OF LAW, WASHINGTON AND LEE UNIVERSITY SCHOOL OF LAW,
STAUNTON, VA

Mr. Chairman Conaway, Ranking Member Peterson, and Members of the Committee. Thank you for the opportunity to address you today.

Introduction

My remarks are organized around two questions:

How are people actually using this new technology? And: How should a regulator best proceed in light of how the technology is being used? I will briefly summarize my conclusions before returning to the body of my testimony.

First, blockchain, the technology underlying the current rash of cryptocurrencies, is a relatively new database technology that permits communities to self-organize and build trustworthy decentralized databases. Many communities have formed just to see what the technology can do, and are attempting different experiments, often with each offering its own “coin.” (To be sure, scam artists have also flocked to the development scene.) The potential value in these experiments is considerable: collaborative communities of artists, new corporate forms, distributed autonomous organizations, fast and low-cost check settlement, digitization of securities, open and low-cost electronic mortgage and secured transactions systems, secure international remittances, voting systems, and many more are possible applications of the technology.

The Committee will hear about a range of these applications today. The specific area in which I would like to focus is the potential for blockchain technology to act as a catalyst for expansion of online and electronic personal property rights. This is my primary area of research. My conclusions, as below, are that citizens need and want an expansion of personal property rights online; that cryptocurrencies and cryptocurrency tokens can help solve important problems in building markets for digital property; and that caution may be advisable when regulating overlapping spaces and use cases, such as systems in which most people hold an asset to consume it, and a few hold it to speculate on the price.

On to the second question, how to best proceed? Agencies have already for several years found themselves faced with the potential for overlapping jurisdiction over blockchain-based businesses, products, and services, precisely because the technology can support so many different uses. Because blockchains are just databases, their use must determine the oversight response.

Uses of cryptocurrency tokens can be complex. Not all people who hold a cryptocurrency token do so for the same reasons. Some people hold cryptocurrency tokens to consume, some simply to possess, some to speculate, some to trade, and some change their minds from time to time. Thus, tokens have a fundamentally multi-use nature. There is also a time component. Until the owner takes action (consume or trade), the owner’s reason for holding the token may not be knowable. The use and holding of the token as personal property should be generally unproblematic, at least by default. Only the trade and speculation components should trigger regulatory concern, and even then, only if the structure of the transaction looks like an attempt to circumvent some established regulatory mandate.

There are solid paths forward that can protect investors from fraud and permit entrepreneurs and communities to develop new business models. Common sense construction of how groups are using the technology—a “duck test”—will help begin to sort out whether a regulatory structure is needed at all, and if so, which law governs. Rough agency consensus and even active and agile cooperation between regulators can handle these conflicts, and are good for regulators to start working out: more applications of this technology are coming. There is indeed every reason to believe this is how regulation in this space will actually evolve. More concerning is the risk of chilling innovation through incautious overlapping or conflicting regulation. Carefully overlapping jurisdictional claims need not cause contradiction, but it may take time until the contours of how people use the technology become clear.

And when those contours do become clear, good rules can draw workably clean lines between shifting uses of a product or service within a community that weaves across a legal boundary.

*B. Cryptocurrencies and the Future of Property**

In the body of my remarks I would like to discuss how this technology represents a badly needed expansion of personal property rights online. We should care about good property rules for electronic assets. Good property rules contribute to human thriving, or as Nobel Laureate Amartya Sen expressed it, good property rules expand the range of human capabilities. Property matters because it lets people do things. Thus, good property rules are those that expand what people can do. There are three primary ways good property institutions positively impact society.¹ First, good property rules can preserve citizen independence. Property draws an important line between private and state power.² Second, property institutions build individual and social welfare by reducing transaction costs, permitting resources to flow to higher-valuing users.³ And third, property permits humans to express themselves by changing and arranging their environment to reflect themselves.⁴ Here, examples might be the property interest in a home, wedding band, detailed automobile, and so on.

Despite these advantages, personal property rights have had serious trouble transitioning from offline to the online environment. We don't own much personal property online. Instead, we license everything.⁵ If you question whether this is true, consider that people used to own record collections; now they license iTunes, or simply have a subscription to Spotify. People used to have bookshelves; now they have Kindle collections. This modern license framework is in place because, early in the history of the Internet, intellectual property holders were worried about illegal copying. It took several decades to develop a technology, blockchain, which operated like a digital object. Slots in a blockchain—cryptographic tokens—can be traded, held, bought, and sold, but not duplicated. Cryptocurrency tokens cannot be double-spent, because they would be rejected by both the protocol and the other “players.”⁶

As a result, cryptocurrency tokens let us own an intangible electronic asset just like we own a hat. Blockchain technology appears poised to un-stick personal property law online by strongly reducing transaction costs for tracking transactions in digital property rights, and by creating rivalrous (that is, non-copyable) digital assets. Already, cryptocurrency tokens are appearing in court decisions on inheritance, wills and trusts, and other routine treatment of personal property under the common law. It may soon become as routine to own digital tokens as it is to own dollars in a bank account.

Property institutions will deeply benefit from this technology-driven drop in transaction costs. Carol Rose notes: “It costs something to define rights, to monitor trespasses, and to expel intruders.”⁷ As property rights become more complex and harder to define, property systems cost even more. The difference in expense is why we currently have title registries for big items like houses, cars, boats, and airplanes, but not for smaller pieces of personal property. Cryptocurrency tokens can keep track of minute changes in ownership of property interests at strongly reduced costs. Rose predicted that “when there are changes in the technological or adminis-

* **Editor's note:** the testimony is published as submitted, there was no section labeled A.

¹ See Jedediah Purdy, *The Meaning of Property: Freedom, Community, and the Legal Imagination* 19 (Yale University Press 2010).

² Joshua A.T. Fairfield, *Owned: Property, Privacy, and the New Digital Serfdom* 18 (Cambridge University Press 2017) (“His first stream is ‘libertarianism,’ or negative liberty: the idea that property means a kind of liberty from government interference.”) (citing **Jedediah Purdy**, *supra*, at 19).

³ *Id.* (“His second stream is efficiency, or what he calls ‘welfarism’: property is an institution that helps to ensure the free flow of goods for minimum transaction costs, such that it allows people to get what they want at the lowest price.”) (citing **Jedediah Purdy**, *supra*, at 20).

⁴ *Id.* (“Purdy identifies a stream of human personhood, or identity. The identity view of property requires that we have some stability in our environment so that we can build a home, a family, an identity. Property allows us to surround ourselves with reminders of who we are or wish to be.”) (citing **Jedediah Purdy**, *supra*, at 20); see also Margaret Jane Radin, *Property and Personhood*, 34 STAN. L. REV. 957, 957 (1982) (“The premise underlying the personhood perspective is that to achieve proper self-development—to be a person—an individual needs some control over resources in the external environment. The necessary assurances of control take the form of property rights.”).

⁵ See Aaron Perzanowski & Jason Schultz, *The End of Ownership: Personal Property in the Digital Economy* (MIT Press 2016).

⁶ Joshua A.T. Fairfield, *BitProperty*, 88 S. CAL. L. REV. 805, 841 (2015).

⁷ Carol M. Rose, *The Several Futures of Property: Of Cyberspace and Folk Tales, Emission Trades and Ecosystems*, 83 MINN. L. REV. 133 (1998).

trative costs of establishing, monitoring and trading property, there may well be changes in property regimes as well.”⁸ Her advice: look for drops in those costs. There we will find the future of property. And this is precisely what cryptocurrency tokens represent.

These cost drops can fuel further innovation. Just as communications technologies proliferated when the cost of communication went nearly to zero, so a range of property interests will flourish when the costs of transfer go nearly to zero. This is, after all, the model of the broader Internet, which, for all of its “free” price points, is extraordinarily expensive to maintain.⁹ Internet technologies scale most disruptively at near-zero transaction costs.¹⁰ For each drop in transaction costs, a new range of widely scaled and potentially disruptive uses becomes possible.

So far, property institutions have not yet fully realized the benefits of the last 3 decades’ advances in information technology because of the cost needed to record transactions and vet trusted intermediaries to maintain and protect records.¹¹ Token systems can and will reshape property law if they push price points low enough to unleash disruptive and scalable applications.

C. A Path to Successful Oversight

In this section, I turn to the second question, and discuss features of a successful oversight strategy. I derive these principles from experience with several prior analogous regulatory moments: the IRS determination as to when to tax financial gains on virtual objects; the IRS determination as to whether cryptocurrency ought to be taxed as currency or commodity; and the deliberations by FinCEN, CSBC, and other stakeholders in the state and Federal banking systems over whether cryptocurrency exchanges ought to be deemed money transmitters under the Bank Secrecy Act.

Responsible regulation must rest on a frank and common-sense determination of how people are using the technology. A primary benefit of close attention to how the technology is actually being used will be to reduce the number of overlapping oversight claims. Almost every regulator will soon be able to claim jurisdiction over some application of blockchain technology, but of course they will not have jurisdiction over all uses.

Working out jurisdiction over actions or business models that cross several different regulatory boundaries will be time-consuming, but no harder for blockchains than they were for network communications technology generally. SEC, CFTC, FinCEN, IRS, and state banking regulators have spent several years sorting out their various roles in regulating the various uses of cryptocurrency, and there has been measurable progress in determining which regimes and what terms govern.

Tokens do present some interesting problems. First, tokens may be used in different ways by different members of a community. Second, even a single owner may buy, hold, consume, sell, trade, or destroy tokens for different reasons at different times. A community may shift to use products or services in illicit ways that the product creator or service provider did not predict. Illicit uses may make use of a licit support layer. This is precisely what happened when the SEC warned in July of 2017 that The DAO, an Ethereum-based investment and governance platform had likely violated securities regulations.¹² Contrast this with SEC Division of Corporation Finance Director William Hinman’s recent announcement that transactions in Ether are unlikely to be deemed securities transactions.¹³ Agencies are already beginning to sketch out the important distinctions that will help preserve beneficial applications of the technology (investors in Ether were justifiably relieved by the announcement) while permitting oversight of bad practices at the application layer (such as another DAO).

The currently hot characterization debate is whether token sales ought to be deemed regulable under the *Howey* test.¹⁴ I find that discussion unhelpful. *Howey* marks in a sense one of the deepest reaches of the SEC into regular ownership behavior. The case is a placeholder, there to preserve SEC’s right to make further and more in-depth determinations. As such, it is not a particularly good guide to how things should end up. Instead of the rule of *Howey*, a better approach is to look at

⁸*Id.* at 139.

⁹See Joshua A.T. Fairfield, *BitProperty*, *supra*, at 815.

¹⁰See Kevin Werbach, *The Centripetal Network: How the Internet Holds Itself together, and the Forces Tearing It Apart*, 42 U.C. DAVIS L. REV. 343, 347–48 (2008) (“The Internet fosters innovation by eliminating transaction costs, enabling new services to emerge.”).

¹¹See Joshua A.T. Fairfield, *BitProperty*, *supra*, at 813.

¹²See generally SEC, 81207, *Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The DAO* (2017).

¹³See Trevor M. Dodge, SEC Director William Hinman: “Current offers and sales of Ether are not securities transactions,” *The National Law Review*, June 18, 2018, at 1.

¹⁴*SEC v. Howey Co.*, 328 U.S. 293 (1946).

how the technology is actually being used. If a community uses cryptocurrency tokens functionally like securities, then they ought to be regulated as such. But if not, they shouldn't. There should be a well-regulated market for blockchain-traded securities. Companies are working now to legally list and trade securities through blockchain databases, and Delaware has been working to make that possible. There is a legal path for companies wishing to list and trade securities on a blockchain, and some companies are moving to do so. This is the duck test as applied to securities: "if it quacks like a security," and everyone knows the rest.

The harder question is how to characterize token sales when the issuer and majority of purchasers can credibly show that their purpose in buying, holding, selling, and consuming cryptocurrency tokens is not to profit from the efforts of others, but in fact to order rights and relationships in some new way. For example, most community members might use a given token system for clearly non-securities related purposes, but some tokens may be bought, held, and traded by speculators. Further, different actors within the community may take on different positions at different times, and the community as a whole may shift its use of the token. In these cases, the trick is to catch the fraudulent ducks without killing a goose who may lay the golden egg—new and powerful communities and business models. Only a deeper dive into how the asset is promoted, used, and traded can begin to provide an answer.

Entities charged with oversight should be cautious not to squash new arrangements of rights merely because there is an arguable conceptual overlap with the broad language of cases such as *Howey*. However, they must not fail to recognize systems that walk, quack, and waddle like ducks merely because of some shiny new cryptocurrency feathers. Many token sales transparently attempt to bilk the public by selling and supporting junk tokens.¹⁵ Some token sales are a transparent attempt to raise money for business ventures that wish to circumvent securities regulation. But just as clearly, many companies and communities are building communities that have nothing to do with securities, although some users may speculate with the tokens. Part of this is unavoidable. Entities tasked with oversight are reasonably reluctant to overcommit to the legality of some cryptocurrency business models, because they are concerned with lending a false sense of credibility to business practices that may turn out in the end to be fraud. But reasonable common-sense guidance is necessary so that innovators can move plans for businesses from the kitchen table to the garage.

During this shakedown period in token technology, regulators will best be able to decide jurisdictional questions, and citizens will best be able to predict how the law will respond to their attempt to create new business models and new communities, by reasoning from past business practices. This new technology permits us to do new things technologically, not legally. This is not a permanent state of affairs, however. The demand for cryptocurrency tokens also demonstrates that there is serious untapped demand for new and cheaper ways to manage and trade certain kinds of rights, and that people want to be able to directly invest by making cryptocurrency purchase decisions—whether this is wise or not. In the end, regulators may determine that certain kinds of transactions simply cost us all too much in terms of defrauded investors, broken promises, emptied bank accounts, and subsequent claims that regulators should have better insulated consumers from harm. But they should not do so lightly, and should take every precaution to avoid stepping on legitimate novel forms of organizing human productivity while they make a determination of how people are using this technology, and what to do about it.

Conclusion

Blockchain technology has enabled new communities and new business forms. It has also provided the technological basis for a badly needed expansion of personal property rights online. An agency exercising oversight must therefore be sure that the use it observes fits in its regulatory wheelhouse—many new uses will not. In determining what law applies to blockchain technology, the legal regulatory regime must rest on an informed and common-sense determination of how the technology is being used. That simple test has some advanced wrinkles, because cryptocurrency tokens are built for overlapping, shifting, and multiple uses. As a result, regulatory agencies have done best with cryptocurrency technologies when they use a common-sense functional analysis, followed by engagement with the industry or community.

In considering regulatory jurisdiction, common-sense sorting into rough buckets will do more good in the near term, as applications begin to come online, and regu-

¹⁵See, e.g., Nathaniel Popper, *In the World of Cryptocurrency, Even Good Projects Can Go Bad*, NEW YORK TIMES (May 30, 2018), available at <https://www.nytimes.com/2018/05/31/technology/envion-initial-coin-offering.html> (last visited on July 13, 2018).

lators see which applications are likely to impact society the most. In the current characterization debate, a token should be deemed a security when it operates like a security, a commodity when it operates as a commodity, a currency when it operates as a currency, and a simple property interest when it operates as a simple property interest.

The CHAIRMAN. Thank you, Mr. Fairfield.
Ms. Baldet, 5 minutes.

**STATEMENT OF AMBER BALDET, CO-FOUNDER AND CHIEF
EXECUTIVE OFFICER, CLOVYR, NEW YORK, NY**

Ms. BALDET. Chairman Conaway, Ranking Member Peterson, and Members of the Committee, thank you for the opportunity to be here this morning. I am Amber Baldet, Co-Founder and CEO of Clovyr, a company building tools that make it easier to build decentralized applications on top of both publicly accessible blockchain networks, and access-controlled distributed ledgers.

Previously, I led the blockchain program at JPMorgan, though I would like to note that my comments today do not represent my former employer. I also currently sit on the Board of the Zcash Foundation, a nonprofit organization seeking to advance the state of the art for privacy technology as applied to Internet infrastructure and privacy preserving cryptocurrencies.

These are a variety of disparate hats, all of which lead me to the same message. My commentary today concerns the importance of a cautious and thoughtful regulatory approach to innovative technologies, even—and especially—those that might disrupt business as usual or add to the complexity of regulating the Internet, as both critical infrastructure and a shared public good.

We must determine how to balance the enormous potential value of this technology with the need for consumer protections and national security, and how to achieve this while respecting human and constitutionally protected rights.

So far, money seems to be the killer app for blockchain. Much as the early Internet's killer app, e-mail, continues to be a cornerstone for how we communicate online, peer-to-peer payments will likely grow into and persist as a ubiquitous part of our personal and professional daily lives. In fact, the ability to spend, trade, rent, or license other sorts of unique digital bearer assets could be applicable to many things we own, mortgages, securities, collectibles, intellectual property rights, personal data, *et cetera*.

Imagining this mature, interconnected global ecosystem of such markets feels like standing in the 1990s and imagining Netflix streaming on your phone; and yet, my concern is not the speed with which we reach that end stage, it is the choices that we make along the way, which stand to be as hotly contested and impactful as net neutrality, the DMCA, FOSTA/SESTA, or the on again, off again discussion of state-mandated weak cryptography continues to be.

While we struggle to overlay existing regulatory frameworks onto new technology that is useful precisely for its fluidity, other areas of the world are embracing that ambiguity and learning by doing. In Afghanistan, for example, Code to Inspire helps train young women for technical careers and pays them in Bitcoin, which they can use in local shops as well as global marketplaces. In a place where women's banking and even physical agency is limited, finan-

cial autonomy and digital inclusion is a powerful force for equality and democracy.

In some African countries and places with less legacy financial infrastructure, companies are using crypto-assets to enable farmers to properly track and register their commodities, and increase their bargaining power in downstream market pricing. Not only can end consumers tip their farmer in support of fair and sustainable working conditions, but every other factory or wholesale retailer along the way can make more informed decisions about the providence of inputs to their products.

In the United States, Square, whose business strategy is already based on disrupting traditional payments processors, has added the ability to buy, sell, and transfer Bitcoin into its mobile app, and there are many products targeting cryptocurrency investors and early adopters.

There are also several more experimental projects that are interesting. For example, using economic incentives to battle fake news, cryptocurrency micropayments as an alternative business model to data-hungry online advertising, and fluid marketplaces for unused disk space on your home computer as a disruptive force to centralized Cloud storage. These projects, all launched as initial coin offerings, ICOs, either on a new single purpose blockchain network or as a token on top of an existing network, like Ethereum, are often compared to the Internet startup boom of the 1990s.

The ability to “code oneself out of business” is a novel property of these decentralized blockchain applications, but most experiments today invoke a variety of human-controlled workflow checkpoints and escape hatches to allow intervention if necessary.

Along with understanding who controls access to the network and who can modify the rules of the system, identifying who controls these escape hatches might be helpful in sorting tokens into various asset classes once a sensible taxonomy has been established.

As a counterpoint, blockchain is not the answer to every problem. For example, I recommend extreme caution with exploration of blockchain-based e-voting. Ensuring one person one vote while keeping ballot selections private is an incredibly complex computer science and human coordination problem that we are not ready to tackle yet. Internationally, it is no surprise that some of the central banks most aggressively investigating cryptocurrency as an alternative or enhancement to their existing currencies are in Venezuela, Russia, and China.

Going forward, as there is inevitably more discussion of the potential for a digital dollar, I encourage strongly encrypted, privacy-preserving design choices coupled with opt-in selective disclosure, as opposed to options like mandatory cryptographic back doors or golden keys, which could make the U.S. financial system a very attractive target for nation-state sponsored cyberattacks and hackers. As that conversation matures, we must clarify how FinCEN, OFAC, and other relevant rules can be applied, modified, or interpreted to balance many competing interests.

In conclusion, even—and hopefully if—this Committee’s guidance is simply a strong commitment to non-interventionism, safe harbors for innovators, and work towards resolution of the patchwork

fabric of state laws, the time it takes to come to such a commitment may have the unfortunate effect of eroding America's early mover advantage in technical innovation and entrepreneurship.

Thank you.

[The prepared statement of Ms. Baldet follows:]

PREPARED STATEMENT OF AMBER BALDET, CO-FOUNDER AND CHIEF EXECUTIVE
OFFICER, CLOVYR, NEW YORK, NY

Chairman Conaway, Ranking Member Peterson, and Members of the Committee, thank you for the opportunity to be here this morning. I'm Amber Baldet, co-founder and CEO of Clovyr, a company building tools that make it easier to build decentralized applications on top of both publicly accessible blockchain networks and access-controlled distributed ledgers.

From 2015 to April of this year, I led the blockchain program for JPMorgan's Corporate & Investment Bank, though I'd like to note that my comments today do not represent my former employer. I also currently sit on the Board of the Zcash Foundation, a nonprofit organization seeking to advance the state of the art for privacy technology as applied to Internet infrastructure and privacy-preserving cryptocurrencies.

Technical tooling, corporate and financial industry transformation, digital privacy and public cryptocurrency advocacy: these various hats might sound incongruous, but I see them as interconnected pieces of a larger puzzle. The puzzle we are trying to solve is the design for the next-generation fabric of both macro and micro-economies.

E-mail allows you to send a digital version of a birthday card to a grandchild instantly. Cryptocurrency like Bitcoin gives you the ability to put the digital equivalent of \$10 inside that card. No need to attach a code for a gift card redeemable at a single retailer or buy a clunky prepaid cash card from a credit card company. Whereas you might attach the same family photo to three different birthday cards, you can't send the same \$10 more than once. The revolutionary proposition of cryptocurrency—or more broadly, crypto-assets—is the ability to send something you own across the Internet and then irrefutably not have it anymore, without relying on a third party to intermediate or otherwise witness the event. So far, money seems to be the killer app for blockchain, but you can imagine that the ability to spend, trade, rent, or license unique digital bearer assets could be applicable to many things we own: mortgages, securities, collectibles, intellectual property rights, unused disk space on your home computer, personal data, *etc.*

Imagining a mature, interconnected global ecosystem of such markets feels like standing in the 90s, looking at a pre-World Wide Web electronic bulletin board system and trying to imagine Netflix streaming on your phone. The prospect seems so fanciful as to be impossible, but here we are. And yet, my concern is not getting to that end state, it's the choices that we make along the way. As evidenced by the debate around, and impact of, legislation like the DMCA (Digital Millennium Copyright Act), Net Neutrality, FOSTA/SESTA (Fight Online Sex Trafficking Act/Stop Enabling Sex Traffickers Act), or sporadic discussion of state-mandated weak cryptography since the 1990s (*e.g.*, Compliance with Court Orders Act of 2016), the government greatly impacts how we are all able to use Internet and communications utilities which are inexorably woven into the vast majority of Americans' daily lives.

The peer-to-peer protocols which underpin crypto-asset networks are not much different than those that underpin the Internet; they are just rules for how to route bits and bytes. They do not care about the legality or morality of what crosses the wire and can be used in service of business as usual, political action, commission of crimes, facilitating human rights, or sharing funny photos of cats.

Everything old is new again, and we are at the precipice of the same choices for crypto-asset networks as for the Internet. The difference, of course, is that we did not previously need to decide if every email was possibly a security with taxable profit and loss. The discussion today concerns the financial classification of the assets that cross the wires, which is important, but cannot be completely decoupled from the treatment of the Internet any more than litigation about a car crash can be divorced from observations about the condition of the road, timing of traffic lights, speed limit signage, and driver compliance with traffic laws.

It's not just about our banking sector, not just corporate supply chains, not just consumer payment rails, but how all these things might be connected both here and abroad to reduce friction and open new possibilities for economic growth. It is recognition that we are building next-generation systemically important infrastructure

for the American economy. It's also about learning how to balance the enormous potential business value of this technology with the need for consumer protections and national security, and how to achieve this while respecting human and Constitutionally-protected rights.

There are many stakeholders in this emerging universe who sometimes have fundamentally divergent philosophies. Yet, they are in near unanimous agreement that when it comes to cryptographically unique digital bearer assets, the genie is out of the bottle. As science fiction author William Gibson said, "The future is already here, it's just not very evenly distributed." While we struggle to overlay existing regulatory frameworks onto new technology that is useful precisely for its fluidity—sometimes it may act like a medium of exchange, sometimes a store of value, a commodity, a security, *etc.*—while we wrestle with that flexibility, other areas of the world are embracing the ambiguity and learning by doing.

In Afghanistan, for example, Code to Inspire helps train young women for technical careers and pays them in Bitcoin, which they can use in local shops as well as global marketplaces. In a place where women's banking and even physical agency is limited, financial autonomy and digital inclusion is a powerful force for equality and Democracy.

Another example is that in places with less legacy financial infrastructure, companies are using crypto-assets to enable farmers to properly track and register their commodities, enhance supply chain transparency and increase their bargaining power in downstream commodities market pricing. Not only can end consumers "tip their farmer" in support of fair and sustainable working conditions, but every other factory or wholesale retailer along the way can make more informed decisions about the provenance of inputs to their products.

The sticking point in such registries might be the perfection of these crypto-assets, in that while we can represent a real-world good on a blockchain, processing of claims in the case of a default requires enforcement practices external to the network. Relatedly, while tokenized physical assets have been proposed as a response to government corruption (for example, forced re-allocation of land rights during a change in leadership), credible threat or use of physical violence still holds more sway over allocation of resources than any ledger ever will. Ironically, then, these sorts of token registries might work best in places that want to leapfrog a generation of banking technology, but already have well-functioning rule of law.

In the United States, several more experimental projects are also interesting, whether it's using economic incentives to battle fake news, cryptocurrency micropayments as an alternative business model to data-hungry online advertising, or fluid marketplaces for unused disk space on home computers as a disruptive force to centralized cloud storage. These projects, all launched as initial coin offerings (ICOs) either on a new single-purpose blockchain network or as a token on top of an existing network like Ethereum, are often compared to the Internet startup boom of the 1990s. Because these are "blockchain native" assets rather than tokenized representations of real-world assets, it may be possible to more closely approximate today's dispute resolution frameworks entirely as programmatic rules within "smart contracts," but only if explicitly coded to do so, and only assuming there are no bugs in the code which cause unintended and possibly irreversible outcomes.

The ability to "code oneself out of business" is a novel property of decentralized blockchains, but most experiments today invoke a variety of human-controlled workflow checkpoints or escape hatches to allow intervention if necessary. Along with understanding who controls access to the network and who can modify the rules of the system, identifying these escape hatches and who controls them might be helpful in sorting tokens into various asset classes once a sensible taxonomy has been established.

Of the myriad applications currently under development, it's hard to tell what's going to take off and what will be most transformative. Nonetheless, the sheer number of people globally working on these projects make it likely that it's only a matter of time until they are no longer considered experimental. The question is how long it will take for distributed ledgers of various incarnations to be considered a legal system of record in enough places that interacting with them is the norm rather than a novelty. Clarity around legal and regulatory treatment in various jurisdictions is, perhaps, the most important factor in the speed of that evolution.

As a counterpoint, and to temper what might sound like unbridled enthusiasm, I recommend extreme caution on engaging with blockchain based e-voting for real-world ballot measures. Ensuring one-person-one-vote while keeping ballot selections private, is both a non-trivial computer science and human coordination problem we're not ready to tackle yet. It is one thing to experiment with making decisions about a blockchain network's governance processes using the network itself, it is quite another to talk about electronic voting processes for something like U.S. elec-

tions, where even traditional electronic voting machines are continually demonstrated to be vulnerable to being hacked.

But when it comes to more promising near-term use cases, the oft-referenced regulatory position of Do No Harm is a helpful signal but is perhaps not strong enough. Recently, new entrants Coinbase and Gemini launched cryptocurrency custody solutions for retail and institutional investors, and this week Coinbase made further strides in SEC approval to list on its exchange tokens which are considered securities. As more traditional assets become tokenized, they may be able to challenge incumbents not because the incumbents are too outdated to understand the technology or unable to develop new products and services quickly enough, but because they are held back from competing due to regulatory uncertainty.

Similarly, as the Federal Reserve and commercial banks take a wait-and-see approach to exploring tokenized representations of the U.S. Dollar, we risk missing the larger picture of what a next-generation Internet of Value means for geopolitics and the future of nation-state economic competition and power projection. It's no surprise that some of the central banks most aggressively investigating cryptocurrency as an alternative or enhancement to their existing currencies are in Venezuela, Russia, and China. As we begin to explore domestic strategy in this area, it will be important to clarify how existing FinCEN, OFAC, and other relevant rules can be applied, modified, or interpreted to not stifle innovation.

Interestingly, the anonymous, censorship resistant features of open blockchain currencies may not prove to be a threat to U.S. financial system at all, but rather turn out to be foundational to creation of a digital U.S. Dollar equivalent that is as well regarded around the world as the physical dollar is today. Going forward, I encourage more discussion of strongly encrypted, privacy-preserving digital currencies coupled with opt-in selective disclosure, as opposed to more naive options like so-called cryptographic backdoors or "golden keys," which are attractive targets for nation-state sponsored cyberattacks and hackers.

In conclusion, even—and hopefully if—this Committee's guidance is simply a strong commitment to non-interventionism, safe harbors for innovators, and work toward resolution of the patchwork fabric of state laws, the time it takes to come to such a commitment may have the unfortunate effect of eroding America's early mover advantage in technical innovation and entrepreneurship. We take for granted that much of the Internet as we know it was developed here at home, and the immense benefits accrued to us because of it. I appreciate your ongoing work to come to consensus on a way to repeat the successes of the early Internet era while learning from the things we could have done better. Thank you for your time.

The CHAIRMAN. Thank you, Ms. Baldet.
Mr. Kupor?

**STATEMENT OF SCOTT KUPOR, J.D., MANAGING PARTNER,
ANDREESSEN HOROWITZ, MENLO PARK, CA**

Mr. KUPOR. Thank you, Chairman Conaway and Ranking Member Peterson for the opportunity to be here today to talk about this very important new technology. My name is Scott Kupor. I am the managing partner for a firm called AH Capital Management, which manages about \$7 billion worth of venture capital assets, and very recently also for a group called CNK Capital Management, which is a \$300 million registered investment advisor fund focused exclusively on investing in crypto-related assets.

I would like to spend my time today to focus on why we believe as investors that crypto-technologies make a very compelling investment opportunity, particularly for members of the venture capital community, and I want to start with a definition that is different from the definition that we often hear about. If you focus on a lot of the public narrative today about crypto-technologies, there are two kind of dominating narratives. One is certainly around Bitcoin and price fluctuations and volatilities, which we heard certainly from the Ranking Member today as well, as well as what are called initial coin offerings, ICOs, for capital fundraising.

As investors, though, we are interested in the broader ecosystem and we use the term *crypto-networks* to describe what we think about as that ecosystem. Very specifically, crypto-networks for us means a new way to build digital services, and by digital services, we mean any Internet application that obviously may exist today, so ridesharing applications, social media applications, and probably a whole host of things, of course, that we haven't even thought about, but where those digital services are owned and operated by a community of network participants rather than by a centralized corporation.

Now, I realize at first blush that when you think about community ownership and management of an asset, that may seem odd, but in fact, if you look at the technology industry, there is actually significant precedent for the existence and success of community-based networks in the development of a significant portion of technology.

First is what is known as the open source software movement. This started back in 1983 actually at MIT by a professor named Richard Stallman, and at the time, it was a very, very radical notion. The idea was that a community of developers would publish and then freely offer their software to others who could modify that software, who could incorporate it into various other projects. It was really, in many respects, a very liberal movement around opening up and reducing copyright initiatives in software.

If you fast forward to today, though, open source is the predominant method of software development and software utilization today in the world. For any data center you go to, which is obviously where major corporations run their Internet applications, Linux, which is a major operating system, is by far the dominant operating system in play, and for all of you, like myself, who walk around with your cell phones all day long, the vast majority of components in your cell phones are what are called android and essentially open source software. The history of open source software is relevant for how we think about the potential for what Bitcoin and crypto-networks can be.

The second important historical analogy is around what we call open protocols, which really form the foundation of the modern Internet that we all use today. An example of this is something called SMTP, which is the protocol that we all use for e-mail transmission. It is an open protocol. It was governed, in many cases, by open communities, by networks, by academics, and in many cases, with government funding, and many people built applications on top of these open networks precisely because they knew that the nature of that protocol would not change. They could rely on the steadiness and the consistency of that protocol on which to build applications.

If we look at technology, the open protocols that are well-developed and well-maintained can become the building blocks on which massive customer utility and economic growth can be built. It is also the case, however, as you look at the start up world that many start up companies have failed by relying on what we call platform risk, which is building on other platforms that are governed by centralized corporations and then finding that the rules of the road

change over time, and that really does significantly handicap their efforts.

As a result of this, what we now see in our business is many developers are hesitant to take on this platform risk and are instead looking at things like crypto-networks as a new and innovative way for developers to create new digital services without the attendant risk that comes from depending upon centralized platforms. In many ways, crypto-networks borrow it from the nearly 50 years of history in the technology industry, which shows that communities of developers can share their work openly and properly govern a network without centralized authority.

But crypto-networks also introduce a very powerful economic incentive that didn't exist in these prior generations. The presence of what we call a token, which creates a direct financial incentive for members of the communities to, in fact, develop and govern the network appropriately. The token really, in a sense, is the glue that binds the various players in the ecosystem and provides the appropriate economic incentives for all market participants.

Understandably so, this creates a whole new set of challenges for regulators. Consistent with recent statements that we have heard from the director of corporate finance at the SEC, we believe that the regulatory nature of crypto-networks varies with the stage of development of a particular project. Briefly, when a centralized sponsor is seeking to raise capital from investors prior to the functional development of the network, this is probably what is known as an investment contract and therefore properly regulated as a security. However, the nature of the tokens that are delivered on that contract can ultimately be regulated as commodities once the fulfillment of that investment contract has occurred.

As stated by the CFTC, some tokens are not securities. Once the network is functional, and in particular cases where the network is decentralized from an ownership perspective, we believe the nature of the tokens looks more like commodities than securities, and therefore probably rightly should be governed by the CFTC. This is precisely because there is no centralized sponsor on which the efforts of the value of the token are largely dependent. Instead, the tokens have value based upon the utility of the service to participants. This actually looks much more like the way commodities trade.

In conclusion, the U.S. has long enjoyed the fruits of innovation in the form of economic growth, job growth, and consumer utilities stemming from many of the great technology companies of our time, and we believe that crypto-networks present a new and exciting opportunity for us to continue on that trajectory. Doing so, however, will require that we develop a regulatory framework that encourages risk taking and capital formation, provides clarity and certainty to market participants, and of course protects individual investors and the integrity of the markets.

Thank you for the opportunity to be here today.

[The prepared statement of Mr. Kupor follows:]

PREPARED STATEMENT OF SCOTT KUPOR, J.D., MANAGING PARTNER, ANDREESSEN
HOROWITZ, MENLO PARK, CA

Chairman Conaway and Ranking Member Peterson, thank you very much for the opportunity to speak with the Committee regarding crypto-technology and its implications for American technology innovation. I applaud this Committee for your efforts to take a closer look at what we believe is a foundational area of technology development, one that is critical to the health of our capital markets, entrepreneurship and the American economy.

By way of background, I am the Managing Partner for AH Capital Management, which manages approximately \$7 billion in venture capital funds focused principally on early-stage IT-related investments. We have been operating this business for just over 9 years and some of the companies in which we have invested and with which you may be familiar include Facebook, Lyft, AirBnB, Instacart, Pinterest and Github. I am also the Managing Partner for CNK Capital Management, a registered investment adviser that manages a \$300 million venture capital fund dedicated solely to investing in crypto-related technologies.

Background on Crypto-networks

I'd like to focus my time here today on what we believe is the foundational importance of crypto-related technologies and why we believe they make a compelling opportunity for the venture capital community.

In doing so, I think it's important to define the space precisely.

The public narrative around crypto-related technologies tends to focus primarily on two areas: (i) Bitcoin itself as a potential store of value and the high levels of volatility inherent in the price of Bitcoin and (ii) the proliferation of initial coin offerings (ICOs) to unaccredited, retail investors, many of which have been rightly criticized by the SEC as inconsistent with U.S. securities laws. While these are no doubt currently significant aspects of the industry, the almost exclusive public focus on these areas obscures the exciting technological innovation that drives our interest in crypto-networks.

Specifically, we define the term "crypto-networks" as:

- a new way to build "digital services,"
- where those services are "owned and operated" by a "community of network participants," rather than by a centralized corporation, and
- where the repository of activity on the network (*i.e.*, the database) is decentralized and maintained by the community.

What are "digital services"? They are simply Internet-based applications, such as many of the ones we enjoy today—ride sharing, messaging, grocery delivery, enterprise applications, to name a few. We believe that developers will create a whole new set of digital services utilizing the principles of crypto-networks, many of which are likely beyond our imagination today but will also yield enormous consumer utility.

And what are those principles of crypto-networks? That they are both owned and managed by the community that develops, maintains and utilizes the networks. This is distinct from the large digital services that we utilize today, where the ownership and management of those services are governed by a centralized corporation.

At first blush, this may sound crazy—that there may be value in community ownership and management of an asset that exceeds that of centralized corporate control? But, in fact, there is well-established precedent for this in the history of the technology industry.

First, is the open source software movement. This started in 1983 as a movement to create free software, led by an MIT researcher named Richard Stallman. Understandably, this was a radical concept at the time—that a community of developers would publish their software freely for others to modify and incorporate into various other open projects. But over time, this work morphed into the mainstream development of open source software, which today is the predominant method by which software is developed. Examples of open source software that have experienced widespread adoption include Linux, an operating system that governs most data center servers today and is a major component in virtually all smartphones and tablets, and Git, an open source software development system used by millions of software engineers globally.

Second, is the development of the very Internet protocols that have given rise to the tremendous job and economic growth and consumer utility that we all currently enjoy from existing digital services. These protocols—which include, for example, SMTP (the protocol for email transmission), HTTP (the protocol to exchange structured text on the Internet) and TCP/IP (the protocol for end-to-end data communica-

tion)—derived largely from academic or government-funded efforts and have been maintained in most cases by communities of academics and developers. They are “open” protocols in the sense that they are the well-established foundations on which many very exciting for-profit businesses have been built (*e.g.*, Facebook, Amazon, Google), knowing that the protocols themselves cannot be changed by a centralized corporation.

Why should we care about this?

Because as the history of the Internet has shown us, open protocols that are well-built and well-maintained can become the building blocks on which massive consumer utility and economic growth can be built.

And why is that? Because for-profit enterprises are willing to take on all of the market risks of building a new company—and venture capitalists are willing to provide the funding for such endeavors—when they know that the foundations on which they are taking that risk cannot be changed at the whim of a centralized corporation.

In contrast, the technology world is also riddled with startup companies that have failed as a result of having taken on platform risk that depends on the rules of the road as defined by centralized, for-profit platforms (in contrast to open protocols). That’s not because centralized, for-profit platforms are inherently bad, but rather because over time their economic incentives require that to remain viable as independent businesses they capture more of the gains associated with their proprietary platforms, often causing them to change the nature of the relationships they once encouraged with other companies who were in fact building on and improving their platform.

What does any of this have to do with crypto-networks?

As we noted previously, crypto-networks enable a new way for innovative developers to create new digital services without the attendant risk of building on centralized platforms. In many ways, crypto-networks borrow from the nearly fifty years of history in the technology industry that enabled the initial Internet protocol development and the open source movement; that is, the idea that communities of developers can share their work openly and properly govern a network without centralized authority. As my partner, Chris Dixon, has written about, crypto-networks essentially replace the requirement to rely on trust from a centralized corporation with the requirement only that you trust the software itself to do what it has been built to do (and for which the fundamental code is open sourced for you to confirm on your own).

But, at the same time, crypto-networks introduce a very powerful economic incentive that did not previously exist in the development of prior technologies—the presence of a token that creates a direct financial incentive for the community members to in fact develop and govern the networks appropriately. “Tokens” in the crypto-networks world perform a series of functions: (i) they are the method of value exchange between network participants—that is, consumers “pay” for services using the token and sellers “receive” tokens in exchange for the services and (ii) they provide the financial incentive to reward developers and other maintainers of the network—that is, people may receive tokens for ensuring the authenticity of the transactions completed on the network.

The Importance of Regulation in Crypto-networks

Thus, the token plays a very important role in the functioning of crypto-networks—it is the glue that binds the various players and provides the appropriate economic incentives for all market participants. And, recall that because all of the software in these networks is open sourced, meaning that anyone who wants to create a competing network can simply take all of the existing software and stand-up a rival network, the competitive incentives for the market participants are designed to be fair and responsive to the user community.

But, the token itself and the decentralized nature of many of these networks create a new set of challenges for regulators.

I want to first be very clear that we believe appropriate regulation in crypto-networks is very important and we welcome the opportunity to work with you, other Members of the House and Senate and the various agencies who are interested in creating a regulatory framework that both encourages innovation and protects consumers and well-functioning capital markets. There is an important role for the regulatory community to play and we believe that role is one of the reasons why the U.S. has long been a leader in the commercial development of so many breakthrough technologies.

In fact, the work that CFTC Chairman Giancarlo has done in setting up LabCFTC is a great example of how the regulatory community is trying hard to balance the

needs of encouraging technological innovation with those of protecting consumers. Such collaborative engagement between regulators and innovators is precisely the type of activity that is required in such fastmoving markets as are crypto-network-related activities. Thank you as a Committee for your support and sponsorship in these initiatives.

Consistent with recent statements from the Director of Corporate Finance at the SEC, we believe that the regulatory nature of crypto-networks varies with the stage of development of a particular project. Briefly, if a centralized sponsor is seeking to raise capital from investors prior to the functional realization of the network itself, the contract between the sponsor and investor is likely an “investment contract” and thus properly regulated under the U.S. securities laws by the SEC. The nature of the to-be-delivered tokens under that contract, however, may not be securities; they need to be evaluated using the same *Howey* test as do all potential securities.

As stated by the CFTC, some tokens are not securities. Once the network is functional and, in particular in cases where the network is decentralized, we believe that the nature of the tokens looks more like commodities than securities. This is because there is no centralized sponsor on whose efforts the value of the token is largely dependent. Rather, the tokens will have value that represents the utility of the service to its participants; the value will not be derived from the coordinated activities of a centralized sponsor.

Obviously, these are not easy determinations and will require the efforts of this Committee, among others, and the various regulatory agencies. But, we believe this framework is consistent with early pronouncements from both the SEC and the CFTC.

Regardless of the jurisdictional boundaries, we believe that investor protection, well-functioning capital markets and support for innovation should be the hallmark of the regulatory focus.

Summary

In summary, I would offer the Committee the following observations:

- The U.S. has long been a leader in technology, in large part due to a favorable regulatory and financial environment that has fostered risk taking and innovation.
- While we have enjoyed the fruits of this innovation in the form of economic growth, job growth and consumer utility stemming from many of the great technology companies of our time, we believe that crypto-networks presents a new and exciting opportunity for us to continue on that trajectory.
- This is why you see venture capitalists and other financial professionals increasing their investment focus in this area. Just like other areas of technology development, our job is to provide risk capital to the areas of innovation that we believe can support long-term, self-sustaining enterprises. We believe crypto-networks is one such area.
- But, to ensure that the U.S. continues to be the favored haven for such technological innovation, we need to develop a regulatory framework that encourages risk-taking and capital formation, provides clarity and certainty to market participants and protects individual investors and the integrity of the markets.

I thank you for your time and look forward to the opportunity to work with the Committee on this important topic.

The CHAIRMAN. Thank you, Mr. Kupor.
Mr. Gorfine, 5 minutes.

STATEMENT OF DANIEL GORFINE, J.D., DIRECTOR AND CHIEF INNOVATION OFFICER, LabCFTC, COMMODITY FUTURES TRADING COMMISSION, WASHINGTON, D.C.

Mr. GORFINE. Thank you, Chairman Conaway, Ranking Member Peterson, and Members of the Committee for the opportunity to testify before you today. I am Chief Innovation Officer and Director of LabCFTC at the U.S. Commodity Futures Trading Commission. The testimony presented here reflects my own views and does not necessarily reflect the opinions or the view of the Chairman or the Commission.

In May of last year, Chairman Giancarlo announced with bipartisan Commission support the launch of LabCFTC, the agency's effort to help create a model for regulatory engagement and modernization in light of the ongoing digitization of our markets. Its mission is to facilitate market enhancing innovation, inform policy, and ensure that we have the technological and regulatory tools and understanding to keep pace with inevitable change. The building blocks of our effort are engagement, testing and experimentation, and education.

Shifting to the primary topic of today's hearing, we are interested in both private or permission-distributed ledger technologies that can improve market infrastructure and in public blockchains that require the use of a virtual currency. Developments across this spectrum have society rethinking the nature of money, how people transact, and how we can more efficiently engage in regulatory, economic, and market activity.

With respect to public blockchains, proponents note that they unlock digital scarcity, enable efficient transfer of ownership, and power the execution of applications, and all of this can be done without the need for a trusted central intermediary that was traditionally needed to verify that each party has and does what it promises. Many, however, appropriately worry that virtual currencies and tokens may be used for illegal activities and are prone to fraud, manias, and bubbles driven by potential misunderstandings and myths regarding their scalability, utility, and intrinsic value.

With recent hype around this space, there has also been a proliferation of ICOs, which may be intended to raise capital for a venture and may bear the hallmarks of a securities offering. Our colleagues at the SEC have been thoughtfully addressing related challenges, and providing additional clarity to the marketplace. And from the CFTC's perspective, given the potential to tokenize a broad range of economic assets, it is important to remind the public that digital assets can also be commodities or derivatives, depending on their terms and how they are structured.

Given the potential and the challenges of this space, Chairman Giancarlo has made clear that the proper response by regulators is not to dismiss the entire movement as misguided or foolish, but rather, to take the time to learn, facilitate the promise, and guard against risks and bad actors. As part of this effort, LabCFTC published its first FinTech primer on the topic of virtual currencies in October 2017. The primer explains that the agency determined in 2015 that certain virtual currencies, such as Bitcoin, are commodities and therefore implicate our jurisdiction. The CFTC has regulatory oversight authority over futures and swaps markets based on commodities, and then has anti-fraud and manipulation enforcement authority over these and the underlying commodity markets. It is important to note, however, that we do not have oversight authority over these underlying markets. Additional details regarding CFTC oversight of crypto-related markets and enforcement and education efforts since the self-certification of Bitcoin futures in December 2017 can be found in my written testimony.

Moving forward, one thing is certain. None of us are able to predict exactly where this innovation is heading. It is accordingly in-

cumbent upon us as a 21st century regulator to continue studying, learning, and keeping pace with change. We look forward to ongoing close collaboration with our regulatory peers, including through the FSOC digital asset working group. We all have the shared goal to educate market participants, target bad actors, and ensure an efficient and effective regulatory framework. We are also focused on bringing clarity and certainty to the market, but need to be sure that we are thoughtful in our approach and do not steer or impede the development of this area of innovation.

While some may seek the immediate establishment of bright lines, the reality is that hasty regulatory pronouncements are likely to miss the mark, have unintended consequences, or fail to capture important nuance regarding the structure of new products.

In the late 1990s during the early days of the Internet, senior government policy advisor Ira Magaziner made the following observation, that given “the breakneck speed of change and technology, the government attempts to regulate are likely to be outmoded by the time they are finally enacted.” Given this dynamic, the government largely avoided a prescriptive approach in favor of principles, focused on educating and empowering law enforcement, and allowed this area of innovation time and space to develop all while maintaining the ability and careful vigilance to act to ensure market integrity. This approach generally seems like the right one when dealing with new technologies, which are largely agnostic as to how they are used. The role of the regulator is to facilitate use of new technologies that can benefit markets and the public more broadly, while deterring and pursuing those who seek to use technology to do harm.

Thank you, and I am happy to answer any questions you may have.

[The prepared statement of Mr. Gorfine follows:]

PREPARED STATEMENT OF DANIEL GORFINE, J.D., DIRECTOR AND CHIEF INNOVATION OFFICER, LABCFTC, COMMODITY FUTURES TRADING COMMISSION, WASHINGTON, D.C.

Thank you Chairman Conaway, Ranking Member Peterson, and Members of the Committee for the opportunity to testify before you today on FinTech innovation, Blockchain, and new assets in the digital age. I am Chief Innovation Officer and Director of LabCFTC at the U.S. Commodity Futures Trading Commission (CFTC). The testimony presented here reflects my own views and does not necessarily reflect the opinions or views of the Chairman, Commissioners, or the Commission.

The mission of the CFTC is to foster open, transparent, competitive, and financially sound markets.¹ The agency oversees markets vital to supporting the transfer of risk between market participants and by extension to the stability and reliability of real-world economic activity, ranging from the production and provision of gasoline for our cars, to the availability of credit for our purchases, and the offering of produce in our grocery stores.²

As one might expect, the agency’s work has always included a focus on agricultural products like wheat and corn, and even precious metals. It is worth asking how do we now find ourselves here making the jump from traditional commodities and risk transfer to FinTech topics like DLT and Bitcoin?

¹See *CFTC Mission Statement*, Commodity Futures Trading Commission <http://www.cftc.gov/About/MissionResponsibilities/index.htm> (last visited July 16, 2018).

²Many of my introductory remarks here derive from my prior publication: See Daniel Gorfine, *FinTech Innovation: Building a 21st Century Regulator*, Georgetown University Law Center Institute for International Economic Law (IEL), Issue Brief 11/2017 (November 2017), <https://www.law.georgetown.edu/iel/wp-content/uploads/sites/8/2018/01/LabCFTC-Chris-Brummer-Dan-Gorfine-IEL-Issue-Brief-November-2017-Accessible.pdf>; see generally, Bruce Tuckman, *Derivatives: Understanding Their Usefulness and Their Role in the Financial Crisis*, J. OF APPLIED CORP. FIN. Vol. 28, No. 1 (Winter 2016).

The answer is that our financial markets are fast-evolving due to technology-driven innovation and this has changed the way market participants interact, trades are formulated and processed, risk is assessed and hedged, and business operations are executed. No longer do market participants rely on face to face interactions and telephones. Instead, markets have become increasingly electronic, digital, and interconnected. This new world in turn creates new market and regulatory opportunities, challenges, and risks.

Much of this dynamic derives from three identifiable threads around FinTech innovation. The first centers on speed, both in terms of innovation and subsequent adoption. The speed phenomenon derives from the profound impact of increased computing power in the development of products, services, and markets, and the Internet in their adoption. The concept of Moore's Law³—which roughly suggests that computing power will expand exponentially over time—has allowed for the development of increasingly powerful, and low cost, computer systems that enable rapid iteration and development of new business models, as well as the capability to do more with increasingly available data. This means that markets and regulators are faced with a constant barrage of innovations and not much time to grasp their implications before interconnected computers permit their ready adoption.

The second is that innovation largely seeks to either disintermediate traditional gatekeepers or change the way they operate. Current financial regulatory frameworks are centered on the intermediaries or gatekeepers that manage the access to our markets or financial services activity. To the extent that innovators are seeking to disintermediate or substantially transform traditional models in order to increase efficiencies, regulators will need to proactively identify how rules and regulations conform or will need to change.

Finally, the increasing complexity of technology-driven business models requires significantly more focus on technological literacy at all levels of leadership, including within business and government. It is simply not enough to all agree to high level platitudes that items like cybersecurity are of great importance—instead it is imperative that we have deep understanding of the details of security protection in order to avoid bad outcomes, including cyber breaches. Indeed, I would suggest that a key emerging risk in our markets is a potential lack of required literacy in the face of increasingly technology-driven business models and processes.

LabCFTC: Building a 21st Century Regulator

Given these market dynamics, and related emerging regulatory challenges, we believe thoughtful 21st century regulatory approaches are needed. This is why last summer, CFTC Chairman Chris Giancarlo announced with bipartisan Commission support the launch of LabCFTC.⁴

LabCFTC is the CFTC's effort to help create a replicable model for regulatory engagement and modernization. The mission of LabCFTC is to facilitate market-enhancing innovation, inform policy, and ensure we have the technological and regulatory tools and understanding to keep pace with changes to our markets. LabCFTC was launched out of our Office of General Counsel so that it can leverage its deep bench of expertise to help manage the interface between technological engagement and innovation, regulatory modernization, and existing rules and regulations.

The building blocks of the effort are engagement, testing and experimentation, education, and collaboration. The core LabCFTC team works closely with subject matter experts from the Agency's operating divisions, who form the LabCFTC liaison network. Through this approach, we can gain a better understanding of emerging risks, technologies, and trends, modernize our regulatory tools and operations, engage with innovators early in the development of new business models, and support better informed policymaking that facilitates market-enhancing innovation.

The effort seeks to involve both internal and external stakeholders through three primary work streams. First, 'Guide Point' provides a dedicated point of contact for FinTech innovators to engage with the CFTC, learn about the CFTC's regulatory framework, and obtain feedback. Such feedback and discourse may provide innovators with valuable information that can help them save time and resources, or allow for the identification of potential friction or uncertainty in existing rules.

Since the beginning of its formation, LabCFTC has met with approximately 200 organizations and discussed a range of technology-related issues, including those in-

³ See Harald Bauer, *et al.*, *Moore's Law: Repeal or Renewal?*, McKinsey & Company (December 2013), http://www.mckinsey.com/insights/high_tech_telecoms_internet/moores_law_repeal_or_renewal.

⁴ Address of J. Christopher Giancarlo to the New York FinTech Innovation Lab, "LabCFTC: Engaging Innovators in Digital Financial Markets," (May 17, 2017) Commodity Futures Trading Commission, <http://www.cftc.gov/PressRoom/SpeechesTestimony/opagiancarlo-23>.

volving machine learning and artificial intelligence, DLT and capital markets infrastructure, virtual currencies, smart contracts, RegTech, cloud, and algorithmic trading. LabCFTC ‘office hour’ meetings have been held in Silicon Valley, Chicago, New York, Boston, and Washington, D.C. And in response to common questions raised through these sessions, LabCFTC published its first FinTech educational primer in October 2017. The primer, leveraging a format which will be applied to a range of innovations going forward, involved discussion of technology use-cases, CFTC jurisdiction, and potential risks and challenges.

Second, ‘CFTC 2.0’ fosters the testing, understanding, and potential adoption of new technologies that can improve markets or make the Commission a more effective and efficient regulator. We are currently crowdsourcing ideas for future innovation competitions,⁵ which may involve, for example, novel ways to visualize CFTC published data, develop market surveillance tools, make our rules more readily machine-readable, or build a more dynamic, digital, and “smart” notice-and-comment platform.

We further believe that it is through developing proofs of concept and truly kicking the tires on new innovations that agency staff can properly understand the application of new technologies, which will subsequently drive more informed policy-making and technology strategies. In some instances, existing law may be an obstacle to participation in this type of testing, research, and proofs of concept. For this reason, the Chairman appreciates the current efforts of Members of this Committee to suggest ways to provide the CFTC with the authority to fully engage with, research, and test emerging technologies.⁶

Finally, ‘DigitalReg’ is designed to support the Commission’s effort to build a 21st century regulator and regulatory approach. Internally, DigitalReg serves as a CFTC-wide resource to help inform the Commission and staff on FinTech-related developments. Externally, DigitalReg acts as a hub to help the Commission collaborate with other U.S. and international regulatory authorities in order to share best practices around FinTech engagement. We were accordingly pleased earlier this year to enter into a CFTC-first FinTech cooperation arrangement with the UK’s Financial Conduct Authority (FCA),⁷ and look forward to ongoing constructive engagement with our domestic and international regulatory peers.

DLT, Blockchain, and Digital Assets

The topics of DLT, blockchain, and digital assets⁸ have been prominent areas of engagement and exploration for the CFTC over the past year. When LabCFTC views the space, we are interested both in private or permissioned ledger networks (also sometimes considered “blockchain-inspired” technologies) that can be deployed by market participants to improve market infrastructure and in public blockchains that require use of a virtual currency to incentivize participation in maintaining the ledger system.

Developments across this spectrum have society re-thinking the nature of money, how people transact, and how we can more efficiently engage in regulatory, economic, and market activity.

On the private or permissioned side of the spectrum, new innovations hold promise in improving clearing and settlement processes, facilitating regulatory reporting and compliance, and even transforming information capture, delivery, and analytics capabilities. The CFTC is also very interested in better understanding their potential ability to power smart (or self-executing) contracts, which can incorporate compliance provisions and potentially decrease execution risks. To be clear, however, this area of innovation is quite distinct from the realm of public distributed ledgers and virtual currencies, and has its own unique set of challenges including around security, scalability, and broader adoption.⁹

⁵ *CFTC Asks Innovators for Competition Ideas to Advance FinTech Solutions*, (Apr. 24, 2018) Commodity Futures Trading Commission, <https://cftc.gov/PressRoom/PressReleases/7717-18>.

⁶ *See, e.g., Commodity Futures Trading Commission Research and Development Modernization*, H.R. 6121, 115th Cong. (2018), <https://www.congress.gov/bills/115/congressional-legislation/6121/text/1>.

⁷ *U.S. CFTC and UK FCA Sign Arrangement to Collaborate on FinTech Innovation*, Commodity Futures Trading Commission, (Feb. 19, 2018) <https://www.cftc.gov/PressRoom/PressReleases/pr7698-18>.

⁸ ‘Digital assets’ is a broad category that includes ‘virtual currencies’ or ‘cryptocurrencies.’ For purposes of this testimony and consistent with CFTC past use, I use the term ‘virtual currencies.’

⁹ *CFTC Primer on Virtual Currencies*. Commodity Future Trading Commission, (Oct. 17, 2017), http://www.cftc.gov/idc/groups/public/documents/file/labefc_primercurrencies100417.pdf (hereinafter “LabCFTC Primer”).

On the public distributed ledger side of the spectrum, it may be helpful to level-set. Virtual currencies are a digital representation of value and may function as a medium of exchange, a unit of account, and/or a store of value. Virtual currencies generally run on a decentralized peer-to-peer network of computers, which rely on certain network participants to validate and log transactions on a permanent public distributed ledger visible to all. The virtual currency serves as the required incentive for miners or validators.¹⁰

Proponents note that these virtual ecosystems unlock digital scarcity, enable the efficient transfer of ownership, and power the execution of relatively autonomous application platforms all without the need for a trusted, central party that was traditionally needed to verify that each party to a transaction has—and does—what it promises.¹¹ In addition to providing new ways to transact over the Internet, these advancements could allow for decentralized platforms or applications that provide consumers with desired goods and services absent a central gatekeeper.¹² Some further note the potential inspiration that virtual currencies may provide Central Banks in the future creation of digital fiat currencies.¹³

Many, however, appropriately worry that virtual currencies and tokens are prone to fraud, manias, and bubbles driven by misunderstandings and myths regarding their scalability, utility, and intrinsic value.¹⁴ Indeed, over time bad actors have commonly invoked the concept of innovation in order to engage in fraudulent activities that target the general public.¹⁵ Additionally, as we are reminded by recent events,¹⁶ concerns regarding the use of cryptocurrencies to facilitate illegal activity are well-founded and require government efforts to ensure that Anti-Money Laundering (AML) and Know Your Customer (KYC) requirements are effectively applied.

With recent hype around virtual coins and tokens there has also been a proliferation of so-called “Initial Coin Offerings” or ICOs, which frequently refers to the sale of virtual tokens to the public that are intended to raise capital for a venture and may bear the hallmarks of a securities offering.¹⁷ Our colleagues at the Securities and Exchange Commission (SEC) have been thoughtfully addressing related challenges,¹⁸ and providing additional clarity to the marketplace.¹⁹ And from the CFTC’s perspective, given the potential to tokenize a broad range of economic assets, it is important to remind the public that digital assets can also be derivatives or commodities, depending on their terms and how they are structured.

Given the potential and challenges of this space, CFTC Chairman Giancarlo has made clear that the proper response by regulators and policymakers is not to dis-

¹⁰ See generally LabCFTC Primer.

¹¹ See Jerry Brito, *Executive Director, Coin Center before the New Jersey Assembly Financial Institutions and Insurance Committee Hearing on digital Currency*, Coin Center (Feb. 5, 2015) <https://coincenter.org/wp-content/uploads/2015/02/NewJerseyLegislatureWrittenTestimony.pdf>.

¹² Steven Johnson, *Beyond the Bitcoin Bubble*, NEW YORK TIMES, (Jan. 16, 2018) <https://www.nytimes.com/2018/01/16/magazine/beyond-the-bitcoin-bubble.html>.

¹³ Qin Chen, *Next Stop in the Cryptocurrency Craze: A Government-Backed Coin*, CONSUMER NEWS AND BUSINESS CHANNEL, (Dec. 29, 2017) <https://www.cnb.com/2017/11/29/federal-reserve-starting-to-think-about-its-own-digital-currency-dudley-says.html>.

¹⁴ CFTC *Customer Advisory: Use Caution When Buying Digital Coins or Tokens*, Commodity Futures Trading Commission, (July 16, 2018), <https://www.cftc.gov/PressRoom/PressReleases/>; see also Shane Shifflett & Coulter Jones, *Buyer Beware: Hundreds of Bitcoin Wannabes Show Hallmarks of Fraud*, WALL STREET JOURNAL (May 17, 2018) <https://www.wsj.com/articles/buyer-beware-hundreds-of-bitcoin-wannabes-show-hallmarks-of-fraud-1526573115>; Angela Monaghan, *Bitcoin Biggest Bubble in History, says Economist who Predicted 2008 Crash*, THE GUARDIAN, (Feb. 2, 2018) <https://www.theguardian.com/technology/2018/feb/02/bitcoin-biggest-bubble-in-history-says-economist-who-predicted-2008-crash>.

¹⁵ CFTC *Charges Nicholas Gelfman and Gelfman Blueprint, Inc. with Fraudulent Solicitation, Misappropriation, and Issuing False Account Statements in Bitcoin Ponzi Scheme*, Commodity Futures Trading Commission (Sept. 21, 2017) <https://www.cftc.gov/PressRoom/PressReleases/pr7614-17>.

¹⁶ Gabriel T. Rubin, *How Bitcoin Fueled Russian Hacks*, WALL STREET JOURNAL (July 13, 2018), <https://www.wsj.com/articles/how-bitcoin-fueled-alleged-russian-hacks-1531517907>.

¹⁷ Jay Clayton & J. Christopher Giancarlo, *Regulators Are Looking at Cryptocurrency*, WALL STREET JOURNAL, (Jan. 24, 2018), <https://www.wsj.com/articles/regulators-are-looking-at-cryptocurrency-1516836363>.

¹⁸ *The SEC Has an Opportunity You Won’t Want to Miss: Act Now!*, (May 16, 2018) Securities and Exchange Commission, <https://www.sec.gov/news/press-release/2018-88>; see also *Pre-ICO Sale is Live*, Howeycoins (2018), available at <https://www.howeycoins.com/index.html>; *Investor Bulletin: Initial Coin Offerings*, Securities and Exchange Commission (July 25, 2017), https://www.sec.gov/oiea/investor-alerts-and-bulletins/ib_coinofferings.

¹⁹ William Hinman, Director of the Division of Corporation Finance, Director Digital Asset Transactions: *When Howey Met Gary (Plastic)*, Yahoo Finance All Markets Summit: Crypto, San Francisco, CA, Securities and Exchange Commission (June 14, 2018) <https://www.sec.gov/news/speech/speech-hinman-061418>.

miss the entire movement as misguided or foolish, but rather to take the time to learn, facilitate the promise, and guard against risks and bad actors.²⁰

As part of this effort, LabCFTC published its first FinTech primer on the topic of virtual currencies in October 2017.²¹ The goal of the primer was to help educate the public about potential use-cases of the technology, CFTC jurisdictional considerations, and relevant risks, including around investment speculation, cybersecurity, and platform operations.

After the self-certification and launch of Bitcoin futures in December 2017, LabCFTC was then able to continue providing support in the areas outlined below to the Commission and operating divisions based on our engagement and study of DLT and virtual currencies.

Digital Assets and CFTC Jurisdiction

In 2015, the Commission determined that certain virtual currencies, such as Bitcoin, met the definition of “commodity” under the Commodity Exchange Act (CEA). This means that the CFTC’s jurisdiction is implicated from an oversight perspective if a commodity-based future or swaps product is offered to the market and from an enforcement perspective if there is fraud or manipulation involving such products or their underlying commodity markets.

In December 2017, two CFTC regulated futures exchanges self-certified and launched Bitcoin futures products.²² Under the CEA and Commission regulations and related guidance, futures exchanges may self-certify new products on twenty-four hour notice prior to trading. This type of framework encourages market-driven innovation and has made America’s listed futures markets the envy of the world. Both CME and CBOE worked with the CFTC for months before launching Bitcoin futures in December 2017. As detailed in our Chairman’s prior Congressional testimony, due to the complexity of issue, the CFTC conducted a “heightened review” of CME’s and CBOE’s responsibilities.

Chairman Giancarlo has outlined six elements regarding CFTC oversight of the virtual currency-related futures and swaps markets. These elements include: (1) staff competency; (2) consumer education through our Office of Customer Education and Outreach; (3) interagency cooperation including with the SEC, the Department of Treasury’s Financial Crimes Enforcement Network known as FinCEN, and through the Financial Services Oversight Council (FSOC); (4) CFTC exercise of its regulatory oversight authority; (5) strong enforcement efforts to deter and prevent fraud and manipulation; and (6) heightened review of virtual currency-related product self-certifications.

With respect to heightened review, in May of this year, our Division of Market Oversight and Division of Clearing and Risk issued a joint staff advisory that gives exchanges and clearinghouses registered with the CFTC guidance for listing virtual currency derivative products. The advisory highlights key areas that require particular attention in the context of listing a new virtual currency derivatives contract, including: enhanced market surveillance; close coordination with CFTC staff; large trader reporting; outreach to member and market participants; and, Derivatives Clearing Organization risk management and governance.

Commission staff further noted at the time that since the Agency found virtual currencies such as Bitcoin to be commodities in 2015, it has taken action against unregistered Bitcoin futures exchanges; enforced the laws prohibiting wash trading and prearranged trades on a derivatives platform; issued proposed guidance on what is a derivative market and what is a spot market in the virtual currency context through an interpretation of ‘actual delivery’²³; issued warnings about valuations and volatility in spot virtual currency markets; and, addressed a virtual currency Ponzi scheme.

²⁰ Written Testimony of Chairman J. Christopher Giancarlo before the Senate Banking Committee, Washington, D.C., Commodity Futures Trading Commission (Feb. 6, 2018) <https://www.cftc.gov/PressRoom/SpeechesTestimony/opagiancarlo37>; see also Testimony of Chairman J. Christopher Giancarlo before the Senate Committee On Appropriations Subcommittee on Financial Services and General Government, Washington, D.C. Commodity Futures Trading Commission (June 5, 2018) <https://www.cftc.gov/PressRoom/SpeechesTestimony/opagiancarlo47>.

²¹ CFTC’s LabCFTC Releases Primer on Virtual Currencies Commodity Futures Trading Commission (Oct. 17, 2017), <https://www.cftc.gov/PressRoom/PressReleases/7631-17>.

²² The following discussion is largely based on: J. Christopher Giancarlo Testimony Before the U.S. Senate Agriculture, Nutrition, and Forestry Committee (Feb. 15, 2018), Commodity Futures Trading Commission <https://www.cftc.gov/PressRoom/SpeechesTestimony/opagiancarlo38>.

²³ CFTC Issues Proposed Interpretation on Virtual Currency “Actual Delivery” in Retail Transactions, Commodity Futures Trading Commission (Dec. 15, 2017), <https://www.cftc.gov/PressRoom/PressReleases/7664-17>.

On the topic of enforcement, it is worth mentioning that the CFTC is working closely with the SEC and other fellow financial enforcement agencies to aggressively prosecute bad actors that engage in fraud and manipulation regarding virtual currencies. The more cops we can have on the beat, the better.

Moving Forward

One thing is certain: none of us are able to predict exactly where innovation is heading, and, accordingly, it is incumbent on us as a 21st century regulator to continue studying, learning, and keeping pace with change. For our part, LabCFTC looks forward to ongoing engagement with a broad range of innovators, including the likes of those on today's panel, to be sure we are skating to where the puck is heading. We can best facilitate market-enhancing innovation and ensure sound policy through sound understanding.

Additionally, we look forward to ongoing close collaboration with our regulatory peers, including through the FSOC digital asset working group spearheaded by our colleagues at the Treasury Department. We all have the shared goal to bring clarity and certainty to the market, but also need to be sure that we are thoughtful in our approach and do not steer or impede the development of this area of innovation. Indeed, while some may seek the immediate establishment of bright lines, the reality is that hasty regulatory pronouncements are likely to miss the mark, have unintended consequences, or fail to capture important nuance regarding the structure of new products or models.

In thinking about the future of a broad range of emerging technologies, it is perhaps informative to harken back to the policy approach that helped facilitate the development of the Internet and the rise of new Internet-based business models. Noting the rapid pace of innovation and technological transformation, then senior policy adviser Ira Magaziner stated in 1997 that given "the breakneck speed of change in [] technology . . . [g]overnment attempts to regulate are likely to be outmoded by the time they are finally enacted."²⁴

Given this dynamic, the government largely avoided a prescriptive approach in favor of principles, focused on educating and empowering law enforcement to target bad actors, and allowed this area of innovation time and space to develop, all while maintaining the ability and vigilance to act to ensure market integrity. While particular areas of innovation may require different treatment, generally this approach seems like the right one when dealing with new technologies, which are, of course, agnostic as to their use. The role of the regulator is to facilitate the use of new technologies that benefit markets and the public more broadly, while deterring and pursuing those who seek to use technology to do harm.

Thank you. I am happy to answer any questions that you have.

The CHAIRMAN. Thank you, Mr. Gorfine.
Mr. Gensler, 5 minutes.

STATEMENT OF HON. GARY GENSLER, SENIOR LECTURER, SLOAN SCHOOL OF MANAGEMENT, MASSACHUSETTS INSTITUTE OF TECHNOLOGY; SENIOR ADVISOR TO THE DIRECTOR, MIT MEDIA LAB, BROOKLANDVILLE, MD

Mr. GENSLER. Thank you. Good morning, Chairman Conaway, Ranking Member Peterson. My condolences on your dad's passing. It is good to be with you all here today. I have testified in front of you a dozen or two dozen times in some previous capacities, but since I was last with you, I took on a new role at MIT where I am engaged, yes, in researching, teaching, lecturing, and advising on digital currency and blockchain technology. Now I say that, but for those who don't know because some are new, I also chaired the Commodity Futures Trading Commission for 4 or 5 years, and before that, long ago, I was 18 years at Goldman Sachs. I bring from my years in finance, my years in public policy, and now, I guess, as an academic, some perspective of what I have learned. And with

²⁴ Steve Lohr, *Policing the Internet: Anyone But Government*, NEW YORK TIMES (Feb. 20, 2000), <https://www.nytimes.com/2000/02/20/weekinreview/ideas-trends-policing-the-Internet-anyone-but-government.html?nytmobile=0&pagewanted=print&src=pm&referer=>.

the Chairman's permission, one thing I have learned as an academic is to ask the audience a little bit about their engagement in Bitcoin. Again, with the Chairman's permission, if I could just ask, how many Members of this Committee have invested in cryptocurrencies? And I am going to ask the audience, too.

The CHAIRMAN. By show of hands?

Mr. GENSLER. We have one. The audience, show of hands?

The CHAIRMAN. Same with the audience.

Mr. GENSLER. Yes, we have about half the audience. That is an interesting split. There we go.

I would say the other thing that splits the community in my discussions usually is this is not a community that splits normally like right and left, Republican, Democratic. This is a community that splits more about Bitcoin maximalist and Bitcoin pessimist, or skeptics on one end and by the way, some of those skeptics and pessimists are Republicans and some are Democrats. Some are Nobel laureates, some are in finance. Whether it is Jamie Diamond or Warren Buffett, and then some of the maximalists can be adventure capitalists like at Andreessen Horowitz and elsewhere. It is interesting the split in the community.

I am probably a little bit center maximalist, if I can say that. I am an optimist on the underlying technology. You will also hear some people say, "Well, not that Bitcoin but the blockchain technology is good," and they kind of split their views that way.

Again, what have I learned? Blockchain technology, I believe, has a real potential to transform the world of finance because it is about money. It is about moving value on the Internet. This new technology could lower costs and risks in the financial sector. Second, to reach its potential, I feel strongly that for public confidence to reach its potential, we need to bring it inside the world that we know, the long held public policy frameworks. Now what are those frameworks? Congress has a role to play to tinker about with these frameworks. I will just say what are our historical frameworks about technology and finance: We guard against illicit activity like tax evasion or money laundering. We insure for financial stability, and we protect investors and consumers. Those are the three big ones. We protect against illicit activity, we insure for financial stability, and we protect investors. Everything else is debatable and we need to adjust the details underneath that.

Third, the SEC and CFTC do have a role to play. Both of them have roles to play. They have released numerous notices and enforcement actions and so forth; however, there is a lot of non-compliance. I mean, there are thousands of entrepreneurs out there that probably right now are not complying with SEC guidance, and there are fewer that are not complying with CFTC guidance, but that is just because the CFTC doesn't have oversight of this thing called the initial coin offering market, and that is where there is a lot going on. And this thing is going large and big. It is about a \$250 billion market, $\frac{1}{4}$ trillion is getting some size. I mean, the overall capital markets in the world are about \$250 trillion or \$300 trillion, so it is not threatening that. But thousands of ICOs have been raised, \$20 billion of capital formation. I am here to say nearly all of them, I don't know if it is 98 percent or 97 percent, but nearly all of them are probably securities under our securities laws

because they are being offered in a pre-functional time. This ICO market is rife with scams and frauds.

Fourth, bad actors have figured out how to use this new currency. Sometimes it is state actors. We learned last Friday it was the alleged, I should say, but the alleged 12 Russian spies. Venezuela tried to raise it off of their oil and outrun U.S. sanctions policy.

Fifth, while Federal agencies are engaged, current laws apply to this activity, there are gaps. If I can mention a few of the gaps. First, I think that there are gaps around the crypto-exchanges themselves, either where you can buy and sell. Why? Because they are right now being regulated through state money transmission laws. This approach, regulating them like Western Union or MoneyGram is not satisfactory because crypto-activity is more complex and it is harder to trace, and it doesn't build on top of the traditional banking system. It is built on something that we can't see that is out there in other countries, like in China and Russia. Second, the crypto-exchanges lack brokered access. They don't have brokers, so there are no brokers, by the way, sending 1099-Bs and my detailed testimony says that maybe the IRS should do something about that so you can just have reporting of the gains. Third, the issuers of securities, the crypto-space, are only slowly coming into the SEC remit. This is going to take 2, 3, 4 years before the SEC really cleans up this space, can they go faster, can we do it right, but it is going to take some time. Fourth, crypto-derivatives are being handled by the CFTC. They are doing it well, but there are two things that worry me about the technology, and one is that the unregulated underlying crypto-cash market is a mess.

The corn and wheat markets that you oversee, the gold and the oil markets, we have a lot of history. We have some confidence about that, and then the CFTC can do their job layering over those underlying commodities. The CFTC is regulating derivatives, but they are referencing an underlying market where it is just, at best, the Wild West and at worst, it is pretty bad.

About that underlying market: The CFTC has general anti-fraud and anti-manipulation authorities with regard to it, but I think that Congress will be debating it. Probably not in this Congress, but I suspect in the next session, the next Congress, you all will be debating should you give the CFTC additional authority, or maybe some other agency. Maybe it will be the SEC, somebody else, but the CFTC needs to have additional authorities about that underlying what I would call cash crypto-market, it is 70 percent of the market. The SEC has securities. The CFTC has derivatives. You will want to debate whether to do something about the underlying market. And last, I think you will need to give them resources along with your friends over at the Appropriations Committee, because these agencies will need that.

Thank you.

[The prepared statement of Mr. Gensler follows:]

PREPARED STATEMENT OF HON. GARY GENSLER, SENIOR LECTURER, SLOAN SCHOOL OF MANAGEMENT, MASSACHUSETTS INSTITUTE OF TECHNOLOGY; SENIOR ADVISOR TO THE DIRECTOR, MIT MEDIA LAB, BROOKLANDVILLE, MD

Good morning, Chairman Conaway, Ranking Member Peterson, and Members of the Committee. I thank you for inviting me to testify regarding the world of crypto-finance birthed by blockchain technology. As is often the case when innovations in finance occur, this Committee's oversight of commodities and derivatives markets is implicated.

On a personal note, it is good to be with you once again.

I'm honored to be testifying in my new role at Massachusetts Institute of Technology (MIT), where I am engaged with a talented team researching, writing and teaching about digital currency, blockchain technology, and the ethics and governance of artificial intelligence. As Senior Advisor to the Director, MIT Media Lab and Senior Lecturer, MIT Sloan School of Management, I have spoken at numerous regulatory, research, or investor conferences related to blockchain technology and will be teaching a graduate course this fall entitled 'Blockchain & Money.' I coauthored an upcoming Center for Economic Policy Research-Geneva Report entitled 'The impact of blockchain technology on finance: a catalyst for change' (Casey, Crane, Gensler, Johnson, and Narula, 2018)

I also am honored to be Chairman of the Maryland Financial Consumer Protection Commission which reports to the General Assembly, Governor and Congressional delegation of Maryland about matters related to financial consumer protection. We held a public hearing in Annapolis last month on cryptocurrencies, initial coin offerings, crypto-exchanges and other blockchain technologies.¹

With the benefit of this experience, I would like to share some thoughts about blockchain technology and more particularly the public policy issues raised by the burgeoning markets for the trading of cryptocurrencies, initial coin offerings and other related crypto-tokens.²

Executive Summary

Blockchain technology has real potential to transform the world of finance. Though there are many technical and commercial challenges yet to overcome, I'm an optimist and want to see this new technology succeed. It could lower costs, risks and economic rents in the financial system.

To reach this potential and for public confidence, blockchain technology and the world of crypto-finance it has birthed has to come within the norms of long-established public policy frameworks.

As with other aspects of finance or other emerging technologies, we must guard against illicit activities, such as tax evasion, money laundering, terrorism finance and avoiding sanctions regimes. We must continue to ensure financial stability. And we must ensure investors and consumers are protected.

As things currently are, though, there is significant non-compliance with respect to many initial coin offerings (ICOs), other crypto-assets and crypto-exchanges.

The question then is how do the crypto-finance markets, this new technology, Congress and regulators go forward? While many U.S. agencies are engaged, and current laws clearly cover much of this new activity, there may be gaps to consider.

To date, crypto-exchanges and digital wallet providers generally have not been registering as banks, exchanges, broker dealers or futures commission merchants. This leaves the only regulatory safeguards—to guard against illicit activity and protect investors—to state-administered money transmission regulations. This approach—regulating exchanges' duties in the same manner that Western Union and MoneyGram are regulated—is not satisfactory. Illicit activity is hard to track, billions of dollars have been lost to hacks, and manipulative behavior is unchecked.

Crypto activities are more complex, inherently harder to monitor and less traceable than straightforward money transfers. Crypto exchanges and digital wallet providers lack the same natural connections to the regulated banking system that money transmission companies have when transferring fiat currencies. Regulated banks help protect customers funds by compliance with the bank secrecy act. As crypto-exchanges lack intermediated access, tax compliance is also compromised as there are not brokers to regularly report crypto-transactions through form 1099-Bs.

¹ Maryland Financial Consumer Protection Commission; <http://dls.maryland.gov/policyareas/maryland-financial-consumer-protection-commission#>.

² Though the research herein builds upon joint work with colleagues, the views expressed are mine alone, and do not represent the views of any of my academic colleagues or fellow MD Commissioners. I have no financial interest in any digital currency, or any blockchain related business.

Furthermore, though both the Securities and Exchange Commission (SEC) and Commodity Futures Trading Commission (CFTC) have released numerous public advisories, notices and enforcement actions, most crypto-exchanges remain unregistered and operate with limited investors protections. Thousands of ICOs have occurred, most being investment contracts under the securities laws, but only a fraction have recently started complying. Studies repeatedly report that the ICO market and crypto-exchanges are rife with scams, frauds and manipulative practices.

The current patchwork approach to addressing these issues—to guard against illicit activities, protect investors & their funds, and promote market integrity—would be better accomplished through application of commodities and securities laws. As outlined below, while issuer based crypto is slowly being brought under securities laws and crypto-derivatives are clearly under the CFTC and commodities laws, there may be a gap Congress considers filling related to cryptocurrencies not subject to securities laws, such as Bitcoin, herein called ‘crypto-cash commodities.’

While the CFTC has general anti-fraud and anti-manipulation authorities with regard to spot transactions in crypto-cash commodities, such as Bitcoin or Ether, the agency does not currently have express registration or plenary rule writing authorities with regard to cash commodities. Furthermore, as the CFTC staff recently said in an advisory letter, “virtual currencies are unlike any commodity that the CFTC has dealt with in the past.”³

Congress may wish to consider providing the CFTC—or another agency—with general authorities to write rules for these markets, including possibly requiring registration for trading on crypto-exchanges solely dealing in cryptocurrencies, aka crypto-cash commodities. Doing so may best protect investors, limit illicit activity and enhance underlying reference markets for crypto-derivatives and exchange traded funds (ETF). It also is critical that the CFTC, SEC and other agencies have sufficient budgetary resources to adequately oversee crypto-markets, especially as these markets have continued to grow.

Clear rules of the road also would allow firms—both incumbents and start-ups—to more fully explore investing in blockchain technology or crypto-assets. Start-ups have had an advantage over incumbents as they generally differ on how they evaluate taking reputational and regulatory risks regarding uncertain regulatory treatment.

Bringing the crypto-world within the long-established public policy frameworks, though, will promote greater innovation and competition, allowing blockchain technologies to be explored to their fullest potential.

Comprehensive Review

Blockchain Technology Potential

Blockchain technology and cryptocurrencies are an innovative tool for creating and moving value on the Internet (digital assets) using blockchains, distributed consensus algorithms, cryptography, and peer to peer networking. Regardless of whether Bitcoin and other cryptocurrencies adequately exhibit the three classic characteristics of money—a store of value, a medium of exchange and a unit of account—they do provide a means to move value and run computer code on the Internet without relying upon a central intermediary such as a bank.

That ties blockchain technology and cryptocurrencies directly to the essential plumbing of the financial sector, which at its core performs the role of efficiently moving and allocating money and risk within the economy.

Though there are many technical and commercial challenges yet to overcome, blockchain technology has the potential to transform the world of finance by creating open protocols to which everyone has access, but nobody has control—to do for finance what the web did for information.

The technology could reduce the “cost of trust”—the costs borne by transacting parties because they have to rely on their counterparties or a trusted intermediary to honestly record completion of the transaction. These costs range widely—from those associated with vault doors, cybersecurity, settlement procedures, user identification, compliance teams, security guards, and anti-fraud regimes, to the excess amounts that centralized institutions can charge customers.

Potential use cases include cross-border payments, clearing and settlement for financial transactions, digital identities, trade finance and supply chain management. Open permissionless blockchain applications such as Bitcoin have also inspired permissioned or private blockchains. The term “distributed ledger technology,” or DLT, is often used to describe this field in broader, generic terms.

³ CFTC Staff Advisory No. 18-14 (May 21, 2018) https://www.cftc.gov/sites/default/files/idc/groups/public/%40rlettergeneral/documents/letter/2018-05/18-14_0.pdf.

With increased competition and innovation in the financial system, DLT—both permissionless and permissioned—offers a catalyst for change by incumbents or as an opportunity for entrepreneurial start-ups, potentially lowering costs, risks and economic rents in the financial sector which represents 7.5% of the U.S. economy.⁴

To reach its potential, though, blockchain technology and the world of crypto-finance, must come fully within long established public policy frameworks.

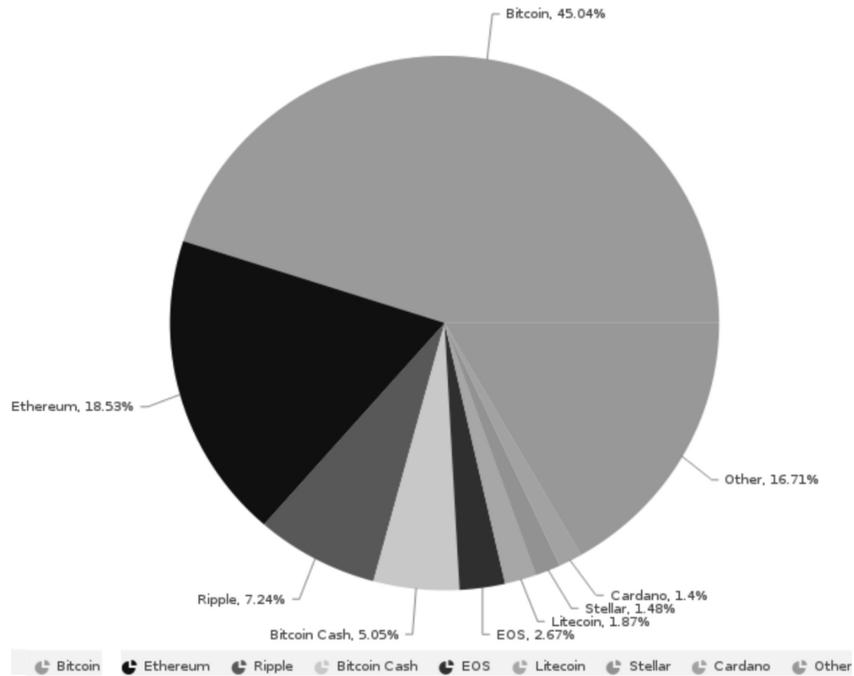
Crypto Finance

Blockchain technology has given rise to the latest addition to an ever-evolving global financial system. The world of crypto-finance—with total market capitalization of \$250 billion,⁵ its innovative forms of crowdfunding and trading on crypto-exchanges—has so far operated largely outside established investor protection frameworks.

To date, 3800 ICOs have launched⁶ and 200 crypto-exchanges are operating⁷ with tens of millions of customers worldwide. About 55 percent of the crypto-market value is now in tokens other than Bitcoin.⁸

Cryptocurrencies by Market Cap

coin.dance



The market is volatile but has grown significantly over the years as shown in the following figure of historical market capitalization.

⁴ Value added by private industries: Finance, insurance, real estate, rental, and leasing: Finance and insurance as a percentage of GDP; Federal Reserve Bank of St. Louis (reviewed on July 15, 2018) <https://fred.stlouisfed.org/series/VAPGDFFI>.

⁵ CoinMarketCap (as of July 14, 2018) <https://coinmarketcap.com>.

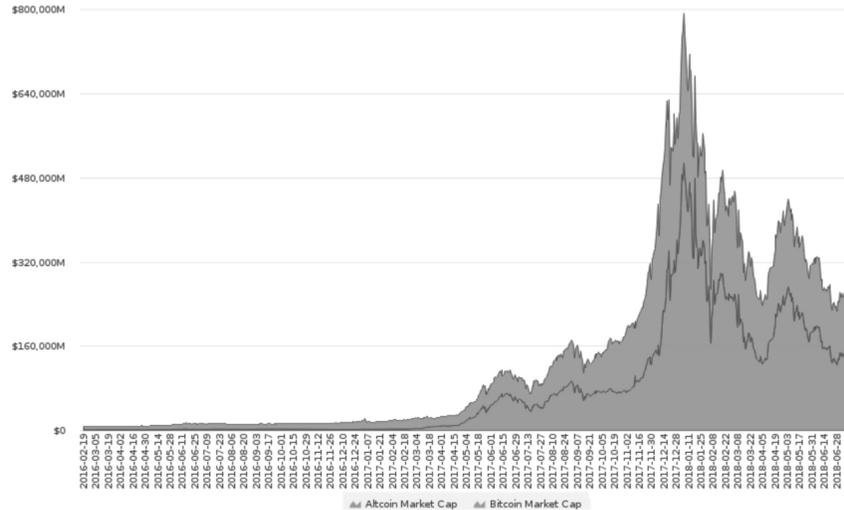
⁶ Stats and Facts; ICO Bench (as of July 13, 2018) <https://icobench.com/stats>.

⁷ 24 Hour Volume Rankings (Exchange); CoinMarketCap (as of July 13, 2018) <https://coinmarketcap.com/exchanges/volume/24-hour/>.

⁸ Market Cap by Cryptocurrency (as of July 13, 2018); Coin Dance; <https://coin.dance/stats>.

Cryptocurrency Market Caps (Historical)

coin.dance



Tokens and Initial Coin Offerings

Burgeoning investor interest in crypto-assets along with the potential for token-based economies, has led to a new means of raising capital for blockchain-based projects: initial coin offerings (ICOs) and similar token sales.

By their very nature and design, ICOs and similar token offerings mix economic attributes of both investment and potential consumption. Marketing documents describe utility-like qualities for the token's stated purpose on a decentralized network, but there is almost always a strong investment component to token sales as they fund development of underlying software and a network. Thus, ICOs are quite different from tokens for a neighborhood laundromat, tickets to the theatre or donation-based crowdfunding platforms such as Kickstarter or GoFundMe.

ICO investors bear economic risk related to the success or failure of the network in which the token is to potentially circulate. Investors lose if the network isn't completed or falls short of hoped for public adoption, but they may gain if the network widely succeeds. ICOs are typically marketed online with the release of a whitepaper prior to the launch of a new blockchain-based decentralized application.

ICO tokens are structured with attributes to promote marketability and potential appreciation. They usually include a so-called 'monetary policy' which is encoded in the software, defining the future supply of tokens and introducing an element of scarcity. They are fungible or interchangeable which enhances liquidity. They are often listed on crypto-exchanges, boosting marketability and transferability.

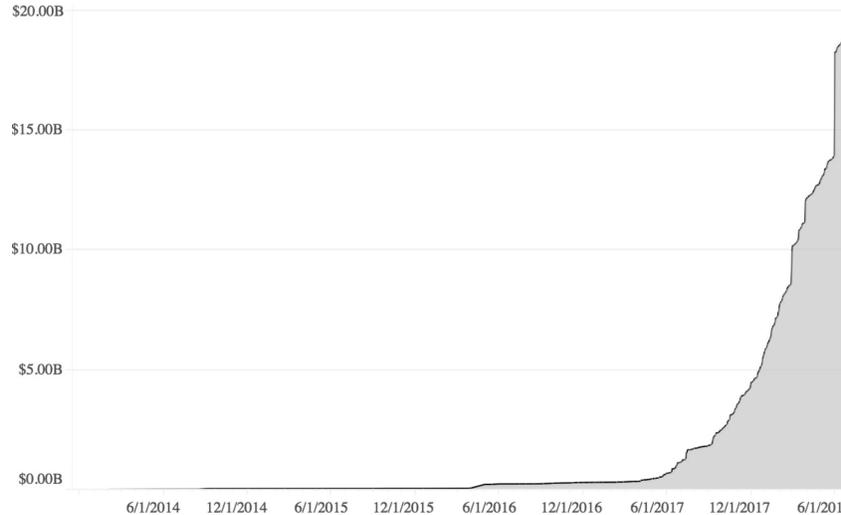
Development and support of the network, though often open-sourced, tends to be largely concentrated around the issuing company or foundation and other closely aligned developers. The selling company, related foundation and founders usually retain a meaningful portion of pre-issued tokens and are motivated to increase the value of the tokens.

Nearly every ICO token's economic realities—its risks, expectation of profits, monetary policies, manner of marketing, and capital formation—are attributes of investment schemes.

Issuance has ballooned in the last 12 months, with CoinDesk reporting total ICO issuance of nearly \$20 billion through June 30. There are no authoritative data sources, however, and most data aggregators are relying on ICO issuers to self-report the amount they raised. EOS raised \$4.2 billion through a year-long ICO and Telegram Group raised \$1.7 billion in two private offerings. CoinDesk reports \$14 billion raised so far in 2018 *versus* just over \$5 billion in all of 2017.⁹

⁹All-Time Cumulative ICO Funding; CoinDesk (as of July 13, 2018) <https://www.coindesk.com/ico-tracker/>.

All-Time Cumulative ICO Funding



Many start-ups are turning to this market to raise capital as there are significant valuation differences *versus* traditional venture capital funding. The valuation disparity may be due, amongst other things, to the public's speculative interest, the potential to share in the network effects of token economies, the token's greater liquidity, reduced transactions costs or regulatory arbitrage.

There is a high failure rate for ICOs. One study in February of 2018 found that 59% of a sample of 2017 ICOs had already failed or semi-failed.¹⁰ There also is a considerable amount of fraud and scams in this field, with numerous ICOs targeting retail investors, using celebrity endorsers, and promising short-term gains. Estimates vary considerably with 25 percent¹¹ to 81 percent as scams.¹² A recent *Wall Street Journal* analysis of over 1400 ICOs found "rampant plagiarism, identity theft and promises of improbable returns."¹³

As cheap money, though, will always displace expensive money (from an entrepreneur's perspective), if valuation disparities continue, it is possible that ICO funding will grow further to displace a significant portion of the \$160 billion venture capital raised annually around the globe.¹⁴ This changing venture funding landscape highlights the need for investor protection to keep pace with market developments.

Crypto-Exchanges

Once Bitcoin developed as the first cryptocurrency, it was only natural that secondary markets and exchange trading would develop.

In aggregate, crypto-exchanges now have tens of millions of customers. Coinbase, alone, has over 20 million accounts, almost as many as Fidelity Investments, more than twice brokerage firm Charles Schwab and nearly as many as Vanguard has investors.¹⁵

¹⁰Nearly Half of 2017 Cryptocurrency 'ICO' Projects Have Already Died; FORBES (February 25, 2018) <http://fortune.com/2018/02/25/cryptocurrency-ico-collapse/>.

¹¹Initial Coin Offerings: Can Regulators Curb the Risks? How Many ICOs Are Scams?; VALUEWALK (March 30, 2018) <https://www.valuewalk.com/2018/03/initial-coin-offerings-regulators-curb-risks/>.

¹²ICO Quality: Development & Trading; Sherwin Dowlat & Michael Hodapp of Satis Group (March 21, 2018) <https://medium.com/satis-group/ico-quality-development-trading-e4fef28df04f>.

¹³Hundreds of Bitcoin Wannabes Show Hallmarks of Fraud; WALL STREET JOURNAL (May 17, 2018) <https://www.wsj.com/articles/buyer-beware-hundreds-of-bitcoin-wannabes-show-hallmarks-of-fraud-1526573115>.

¹⁴Venture Capital Funding Report 2017; CB Insights <https://www.cbinsights.com/research/report/venture-capital-q4-2017/>.

¹⁵Move deliberately, fix things: How Coinbase is building a cryptocurrency empire; WASHINGTON POST (May 17, 2018) https://www.washingtonpost.com/business/economy/move-deliberately-fix-things-how-coinbase-is-building-a-cryptocurrency-empire/2018/05/17/623d950c-587c-11e8-858f-12bceb4d6067_story.html?utm_term=.a18c45536e2b.

Trading appears to be significant, with over \$12 billion in daily volume reported last week.¹⁶ There are now approximately 200 crypto-exchanges and many others have failed. By 2015, one list already had at least 36 failures.¹⁷ In 2018, after the Japanese Financial Services Agency (JFSA) conducted business reviews of exchanges, at least nine suspended their operations.¹⁸

In reviewing exchange volume figures, some caution is in order as market data from crypto-exchanges generally is not audited or regulated. Furthermore, exchanges may use wash sales (*i.e.*, trading involving no change in beneficial ownership that is intended to produce the false appearance of trading) to inflate their volume statistics in an effort to report greater market share. One recent study suggests up to 95% of OKex's reported volume may be nonexistent and 82% of Huobi's may be as well.¹⁹

These exchanges also have some significant differences from traditional securities, derivatives and retail fiat currency exchanges. Crypto exchanges offer direct access to customers rather than access through regulated intermediaries, such as broker dealers or future commission merchants. Centralized crypto-exchanges also take custody of customers crypto and some fiat funds. For instance, Coinbase reports to have custody of over \$20 billion in customer crypto-funds.²⁰

Crypto-exchanges have had significant problems protecting customers' funds held in custody, usually in digital wallets rather than at a bank, broker dealer, or future commission merchants. Numerous hacks have led to significant stolen customer funds. Mt. Gox lost \$473 million in Bitcoin in 2014.²¹ Coincheck lost \$530 million in NEM tokens in 2018.²² A South Korean exchange, Coinrail, was hacked in June of 2018, losing \$40 million, or fully 30% of customer tokens held in custody.²³

Also acting as counterparties to their customers, crypto-exchanges currently have limited guardrails against front running, fraud, or other manipulative practices. For instance, there are no assurances that order book or sales price information posted on these exchanges are current or accurate or that the cryptocurrency held by exchanges in custodial wallets is fully backed with coins on the relevant blockchain.

There are no rules for best execution or order routing amongst crypto-exchanges. There are no rules limiting conflicts of interest or for fair and orderly markets. There are no standards for price transparency—either pre-trade or post-trade. There are no cops on the beat to protect against manipulative practices. In summary, investors have little basis for confidence in crypto-exchanges' order books or price discovery function.

There have been repeated reports of manipulative behavior on these exchanges. A study last year reviewed how a trader using two trading bots on the Mt. Gox exchange may have manipulated the price of Bitcoin up eight-fold in 2013.²⁴ In January of 2018, there were reports of an investigation into whether Bitcoin might have been manipulated on the Bitfinex exchange in a scheme using the token Tether.²⁵

The Futures Industry Association (FIA) expressed its apprehension about the reference markets for Bitcoin futures. As it stated: "We remain apprehensive with the lack of transparency and regulation of the underlying reference products on which these futures contracts are based and whether exchanges have the proper oversight

¹⁶24 Hour Volume Rankings (Exchange); CoinMarketCap (as of July 13, 2018) <https://coinmarketcap.com/exchanges/volume/24-hour/>.

¹⁷36 bitcoin exchanges that are no longer with us, Brave New Coin (October 23, 2015) <https://bravenewcoin.com/news/36-bitcoin-exchanges-that-are-no-longer-with-us/>.

¹⁸Nine Japanese Crypto Exchanges Have Suspended Operations So Far, Bitcoin.com (April 13, 2018) <https://news.bitcoin.com/nine-japanese-crypto-exchanges-have-suspended-operations-so-far/>.

¹⁹Chasing fake volume: a crypto-plague; Sylvain Ribes (March 10, 2018) <https://medium.com/@sylvainartplayribes/chasing-fake-volume-a-crypto-plague-ea1a3c1e0b5e>.

²⁰Announcing the Coinbase Suite of Institutional Products; THE COINBASE BLOG (May 15, 2018) <https://blog.coinbase.com/coinbase-institutional-deea317d23af>.

²¹12 Biggest Cryptocurrency Hacks In History, Benzinger (November 24, 2017) <https://www.benzinger.com/fintech/17/11/10824764/12-biggest-cryptocurrency-hacks-in-history>.

²²Coincheck: NEM Foundation Stops Tracing Stolen Coins, Hackers' Account At Zero, COINTELEGRAPH (March 23, 2018) <https://cointelegraph.com/news/coincheck-nem-foundation-stops-tracing-stolen-coins-hackers-account-at-zero>.

²³South Korean Exchange Coinrail Hacked, \$40 Million in Crypto Reported Stolen; BITCOIN MAGAZINE (June 11, 2018) <https://bitcoinmagazine.com/articles/south-korean-exchange-coinrail-hacked-40-million-crypto-reported-stolen/>.

²⁴Price Manipulation in the Bitcoin Ecosystem; Neil Gandal, J.T. Hamrick, Tyler Moore, and Tali Oberman (June 22, 2017) <https://tylermoore.utulsa.edu/jme17.pdf>.

²⁵Worries Grow That the Price of Bitcoin Is Being Propped Up; NEW YORK TIMES (January 31, 2018) <https://www.nytimes.com/2018/01/31/technology/bitfinex-bitcoin-price.html?dlink>.

to ensure the reference products are not susceptible to manipulation, fraud, and operational risk.”²⁶

The volumes, millions of customers, repeated hacks and ample potential for manipulative behavior, suggest that oversight is worthy by securities, commodities and derivatives regulators around the globe. To date, however, this trading activity has largely taken place outside of investor protection and market integrity regimes.

Public Policy Frameworks

As with the emergence of new technologies in the past, from railroads in the 19th century to the Internet in the late 20th century, there have been debates on how blockchain technology and crypto-finance might best fit within existing public policy and legal frameworks.

Operating within policy frameworks, though, has helped foster traditional capital markets for decades and are just as important for crypto-finance, even if the details for achieving the goals may be adapted to accommodate new technologies.

The public broadly benefits when we:

- Ensure tax compliance.
- Guard against money laundering or terrorism financing.
- Enforce sanctions regimes.
- Promote financial stability.
- Protect investors and consumers.
- Promote market integrity and efficient capital markets.
- Foster economic inclusion and growth.

Achieving these broad public policy goals fosters economic growth and is consistent with promoting innovation.

When investing in any form of financing, whether initial coin offerings, other crypto-assets, or in traditional forms, such as stocks or bonds, the public benefits from full and fair disclosure from issuers.

The investing and hedging public benefits from prohibitions against fraud and deceptive sales practices.

Investors, hedgers, and issuers all benefit from secondary market trading that promote transparency and prohibit manipulative practices such as price manipulation, front running, wash sales, and spoofing (*i.e.*, bidding or offering with the intent to cancel the bid or offer before execution.)

The investing and hedging public benefits when conflicts of interest are disclosed and minimized.

Such core principals of investor protection and market integrity are embodied in U.S. securities and commodities laws regardless of the form of investment. Such common-sense rules of the road bolster confidence in markets and enhances our economy.

Securities Laws, *Howey Test & Duck Test*

Despite issuers’ claims that the intended utility function of their tokens should place them in a different category from securities, there’s no getting away from ICOs’ investment contract attributes which means they should be subject to securities laws.

In essence, as Indiana poet James Whitcomb Riley wrote over 100 years ago: “When I see a bird that walks like a duck and swims like a duck and quacks like a duck, I call that bird a duck.”

An important early test of securities laws’ statutory construct related to the Florida orange groves of William Howey, whose company sold land with an option to lease the land to an affiliated service company and participate in the profits of the crop. Even though not stocks or bonds, the U.S. Supreme Court in 1946 ruled that *Howey’s* land sale agreements satisfied the definition of ‘investment contracts’ under the 1933 Securities Act and thus should be regulated as securities.

The so-called ‘*Howey Test*’ from this case states that: “an investment contract for purposes of the Securities Act means a contract, transaction or scheme whereby a person invests his money in a common enterprise and is led to expect profits solely from the efforts of the promoter or a third party.” *SEC v. W.J. Howey Co.*, **328 U.S. 293**, 299 (1946).

The Securities and Exchange Commission (SEC) has now repeatedly spoken out about the application of securities laws to initial coin offerings and crypto-exchanges

²⁶Open letter to CFTC Chairman Giancarlo regarding the listing of cryptocurrency derivatives; Futures Industry Association (December 7, 2017) <https://fia.org/articles/open-letter-cftc-chairman-giancarlo-regarding-listing-cryptocurrency-derivatives>.

offering ICOs for sale. Sounding like poet Riley, SEC Chairman Clayton stated in February that “I believe every ICO I’ve seen is a security. You can call it a coin but if it functions as a security, it is a security.”

At a Congressional hearing on April 26, 2018, Chair Clayton divided crypto-assets into two areas, those which represent “a pure medium of exchange” and “tokens, which are used to finance projects.” He said that a “pure medium of exchange . . . as a replacement for currency” such as Bitcoin would not be regulated as a security.

As for tokens, Chair Clayton said: “Then there are tokens, which are used to finance projects. I’ve been on the record saying there are very few, there’s none that I’ve seen, tokens that aren’t securities.” He added “To the extent something is a security, we should regulate it as a security, and our securities regulations are disclosure-based, and people should follow those and provide the information that we require.”²⁷

Commodities Laws & Crypto Derivatives

The CFTC has exclusive jurisdiction over the trading of crypto-derivatives on exchanges, *i.e.*, “designated contract markets” (DCMs) and “swap execution facilities” (SEFs) for both futures contracts and swaps as well as the trading of over-the-counter crypto-swaps. The CFTC also has general anti-fraud and manipulation authority for spot transactions in commodities traded in interstate commerce.

Thus, the CFTC has direct jurisdiction for crypto-derivatives. If an exchange offers derivatives on cryptocurrencies, then that exchange must register with the CFTC. Crypto-exchanges that offer to U.S. persons ‘retail commodity transactions’ as defined in statute, could also be subject to the authority of the CFTC.

The CME Group and CBOE Global Markets started trading Bitcoin futures in December 2017. Nasdaq²⁸ and Intercontinental Exchange²⁹ have both said that they are investigating offering cryptocurrency or crypto-derivative trading. Overseas, Germany’s largest exchange, Deutsche Börse, has said it is considering offering Bitcoin futures on its Eurex derivatives exchange.³⁰ A UK start-up, Crypto Facilities, launched an Ether futures contract in May 2018.³¹

The CFTC in its “Coinflip Order” determined that Bitcoin and other virtual currencies are commodities under the CEA in 2015.³² A U.S. District court subsequently concurred with a latter similar determination.³³ Accordingly, the CFTC has general anti-fraud and anti-manipulation authority for spot transactions in the underlying reference cryptocurrencies, whether traded on exchanges or over the counter. The CFTC has brought a number of actions under this authority, one related to the trading of Bitcoin and Litecoin³⁴ and another with regards to the trading of My Big Coin.³⁵ My Big Coin, though, is challenging the jurisdiction of the CFTC contending that their token is not a commodity.³⁶

The Path Forward

How do the markets, this new technology, Congress and regulators move forward?

I will review some considerations organized around the three broad public policy goals of: (1) guarding against illicit activity; (2) ensuring for financial stability[;] and (3) protecting the investing public.

²⁷ *Bitcoin is Not a Security SEC Chairman*; BLOCKEXPLORER NEWS (April 27, 2018) <https://blockexplorer.com/news/bitcoin-is-not-a-security-sec-chairman/>.

²⁸ *After Nasdaq CEO Blesses Cryptocurrency, Investors See Bigger Future for Bitcoin, Others*; FORBES (April 25, 2018) <https://www.forbes.com/sites/kenrapoza/2018/04/25/nasdaq-ceo-bitcoin-trading-cryptocurrency/#556c526613f4>.

²⁹ *Bitcoin Sees Wall Street Warm to Trading Virtual Currency*; NEW YORK TIMES (May 7, 2018) <https://www.nytimes.com/2018/05/07/technology/bitcoin-new-york-stock-exchange.html>.

³⁰ *German market weighs Bitcoin futures*, HANDELSBLATT GLOBAL (December 13, 2017) <https://global.handelsblatt.com/finance/german-market-weighs-bitcoin-futures-865045>.

³¹ *Ethereum Futures Go Live on UK Trading Platform*; COINDESK (May 11, 2018) <https://www.coindesk.com/ethereum-futures-go-live-uk-trading-platform/>.

³² *In the Matter of Coinflip, Inc., d/b/a Derivabit, and Francisco Riordan*; (Sept. 17, 2015), <https://www.cftc.gov/sites/default/files/idc/groups/public/@enforcementactions/documents/legalpleading/enfcoinfliporder09172015.pdf>.

³³ *Bitcoin and Cryptocurrencies Are Commodities, Federal Court Rules, Bitcoin.com* (March 7, 2018) <https://news.bitcoin.com/bitcoin-cryptocurrencies-commodities-federal-court-rules/>.

³⁴ *Federal Court in NY Enters Preliminary Injunction Order Against Patrick K. McDonnell and his Company CabbageTech, Corp. d/b/a Coin Drop Markets in Connection with Fraudulent Virtual Currency Scheme*; CFTC (March 6, 2018) <https://www.cftc.gov/PressRoom/PressReleases/pr7702-18>.

³⁵ *CFTC Sues Obscure Crypto Scheme for Fraud*; COINDESK (January 24, 2018) <https://www.coindesk.com/cftc-sues-crypto-scheme-big-coin-fraud/>.

³⁶ *My Big Coin Tells Court Tokens aren’t Regulated by CFTC Because they are Not Commodities*; CROWDFUND INSIDER (April 5, 2018) <https://www.crowdfundinsider.com/2018/04/131518-my-big-coin-tells-court-tokens-arent-regulated-by-cftc-because-they-are-not-commodities/>.

Guarding Against Illicit Activity

On balance, though, blockchain technology and cryptocurrencies have given the official sector new challenges in guarding against illicit activities. The crimes aren't generally new. The means and methods, though, particularly of payment, may be.

The pseudonymous nature of blockchain-based records obscures the identity of actors, raising concerns for law enforcement authorities tasked with guarding against illicit activities. At the same time, the private sector has had legitimate concerns about the privacy of data shared on Bitcoin and other open permissionless blockchain applications.

Interestingly, Bitcoin and other blockchain applications while often referred to as anonymous, are more accurately what security experts would call pseudonymous. Bitcoin transactions do not include names of individuals or companies, but they do provide Bitcoin addresses, which if found to be linked to any personal data, such as your e-mail or ISP address, may allow for some transparency. Thus, blockchain technology allows some information about participants to be gleaned from patterns in the transaction records, balances in the unspent transactions outstanding and blockchain forensics.³⁷

Given the pseudonymous nature of Bitcoin, it was only a matter of time and technological innovation before a number of cryptocurrencies would be developed promoting more anonymity. These anonymity-focused-crypto-assets have specific designs that make their transactions harder to track on their underlying blockchains. Monero, Dash and Zcash are the three with the largest market capitalization, totaling about \$5 billion, but many more exist and are marketed to the public.³⁸ It has been reported that Japan this spring has been encouraging crypto-exchanges to halt listings of trading anonymity-focused-crypto-assets.³⁹ On the other hand, it has been recently reported that Coinbase is considering listing Zcash for the first time.⁴⁰

Dark Markets

One of the most harmful activities has been on so-called dark markets. These markets operate with anonymous communications through the Tor network, a free and open network which provides users anonymous and censorship resistant means of communicating on the Internet.⁴¹ Dark markets have generally used Bitcoin for escrowed payments. They list for sale illegal drugs, weapons, stolen credit card details, and forged documents offered by hundreds or sometimes thousands of vendors.

U.S. and international enforcement authorities have successfully taken down a number of dark markets trafficking in illegal activities, but other markets keep popping up in their place. When the U.S. Department of Justice shut down AlphaBay in July of 2017, it was estimated to be ten times larger than the notorious Silk Road web site which was shut down in 2013. Dutch authorities, working along with U.S. authorities successfully shut down another large dark market, Hansa, just 2 weeks later.⁴²

Beyond use on the darknet, there are those around the globe who seek to use these new technologies to thwart government oversight of money laundering, tax evasion, terrorism financing, or evading sanctions regimes.

State Actors

Two high profile uses of cryptocurrencies in efforts to thwart U.S. policy were by foreign government actors. In January of 2018, Venezuela announced a \$5 billion oil-backed ICO called Petro. In response, augmenting previously established sanctions, the President signed an Executive Order in March prohibiting U.S. persons

³⁷ *Stealing bitcoins with badges: How Silk Road's dirty cops got caught*; arsTechnica (August 17, 2016) <https://arstechnica.com/tech-policy/2016/08/stealing-bitcoins-with-badges-how-silk-roads-dirty-cops-got-caught/>. Also see: *A Fistful of Bitcoins: Characterizing Payments Among Men with No Names*; Meiklejohn, Pomarole, Jordon, Levchenko, McCoy, Voekler, & Savage (2013) <https://cseweb.ucsd.edu/~smeiklejohn/files/imc13.pdf>.

³⁸ *9 Anonymous Cryptocurrencies You Should Know About*; Coinsutra (February 2, 2018) <https://coinsutra.com/anonymous-cryptocurrencies/>.

³⁹ *Japan's Financial Regulator Is Pushing Crypto Exchanges To Drop 'Altcoins' Favored By Criminals*; FORBES (April 30, 2018) <https://www.forbes.com/sites/adelsteinjake/2018/04/30/japans-financial-regulator-is-pushing-crypto-exchanges-to-drop-altcoins-favored-by-criminals/#22d47e3e1b8a>.

⁴⁰ *Coinbase Considering Cardano, Stellar Lumens, Zcash, 0x & BAT Token Listings*; BITCOIN EXCHANGE GUIDE NEWS (July 13, 2018) <https://bitcoinexchangeguide.com/coinbase-considering-cardano-stellar-lumens-zcash-0x-bat-token-listings/>.

⁴¹ Tor <https://www.torproject.org>.

⁴² *Forget Silk Road, Cops Just Scored Their Biggest Victory Against The Dark Web Drug Trade*; FORBES (July 20, 2017) <https://www.forbes.com/sites/thomasbrewster/2017/07/20/alphabay-hansa-dark-web-markets-taken-down-in-massive-drug-bust-operation/#72702fd15b4b>.

from purchasing or dealing in any digital currency, coin or token of the Government of Venezuela.⁴³

On July 13, 2018, the U.S. charged 12 Russian military intelligence officers with conspiracy to interfere with the 2016 elections. Amongst the charges, count ten alleges conspiracy to launder money. It reads, in part: “the defendants conspired to launder the equivalent of more than \$95,000 through a web of transactions structured to capitalize on the perceived anonymity of cryptocurrencies such as bitcoin.” It is alleged that: “they principally used bitcoin when purchasing servers, registering domains, and otherwise making payments in furtherance of hacking activity.” The indictment states that: “The use of bitcoin allowed the Conspirators to avoid direct relationships with traditional financial institutions, allowing them to evade greater scrutiny of their identities and sources of funds.”⁴⁴

Tax Compliance

The U.S. Internal Revenue Service issued guidance in 2014 on the use of what they called ‘virtual currencies’, such as Bitcoin and other crypto-assets. In determining that all virtual currencies are treated as property for U.S. tax purposes, the IRS said that general tax principals applicable to property transactions apply to virtual currencies. Taxpayers receiving virtual currencies for payment of goods and services must include their fair market value in their reported gross income.

Taxpayers also are required to include in income any gains or losses upon a sale or exchange of virtual currencies.⁴⁵

One open question that investors and tax practitioners had had was the appropriate treatment under the tax laws of crypto to crypto-exchanges. The law was clear that tax could be deferred by treating these trades as so-called ‘like-kind exchanges’ under IRS section 1031. If that was even possible prior to 2018, it no longer is now, with amendments to Section 1031 included in the Tax Cut and Jobs Act to make like-kind exchanges only applicable to real estate transactions.⁴⁶

One challenge for tax compliance is that crypto-exchanges have not yet been sending form 1099-B, reporting on transactions, to their customers and the IRS. The IRS requires brokers to do so with regard to all broker or barter exchange transactions.⁴⁷ As discussed elsewhere, though, the current model for crypto-exchanges does not generally include brokers, leaving a significant gap in tax reporting. The U.S. Internal Revenue Service had to win in Federal court before the crypto-exchange Coinbase was willing to share information on their most active customer accounts—approximately 13,000 accounts—with the IRS.⁴⁸

The IRS, if need be working with Congress, should close this gap and require crypto-exchanges lacking intermediated brokered access to provide customers and the IRS with form 1099-B for their crypto and other property transactions. In addition, the IRS should close gaps with regard to requirements for taxpayers with offshore crypto-accounts on filing a report of foreign bank and financial accounts (FBAR).⁴⁹ This has been a gray area which could undermine tax compliance.⁵⁰

First Line of Defense—Money Transmission Laws

There is a widely held view amongst most policy officials globally that we must guard against such threats—whether by state actors or private-sector actors—though how best to do so has been up for debate.

The first line of defense has been through money transmission laws and bank secrecy laws requiring compliance with anti-money laundering (AML), combating financing of terrorism (CFT), and know your customer (KYC) laws. The U.S. Treas-

⁴³ *Executive Order on Taking Additional Steps to Address the Situation in Venezuela*; White House (March 19, 2018) <https://www.whitehouse.gov/presidential-actions/executive-order-taking-additional-steps-address-situation-venezuela/>.

⁴⁴ *U.S. v. Netyksho, et al., Indictment*; Count ten, paragraph 57 (July 13, 2018) <https://assets.bwbx.io/documents/users/iqjWHBFdfjIU/rs96.XUFx2Gw/v0>.

⁴⁵ *IRS virtual currency guidance: Virtual currency is treated as property for U.S. Federal tax purposes; General rules for property transactions apply*; IR-2014-36; IRS (March 25, 2014) <https://www.irs.gov/newsroom/irs-virtual-currency-guidance>.

⁴⁶ *The Truth About Cryptocurrency And Like-Kind Exchanges*; FORBES (February 19, 2018) <https://www.forbes.com/sites/tysoncross/2018/02/19/the-truth-about-cryptocurrency-and-like-kind-exchanges/#33c7cdc26fd1>.

⁴⁷ 2018 Instructions for form 1099-B; IRS <https://www.irs.gov/pub/irs-pdf/i1099b.pdf>.

⁴⁸ *Coinbase Notifies Customers That It Will Turn Over Court-Ordered Data*; FORBES (February 28, 2018) <https://www.forbes.com/sites/kellyphillipserb/2018/02/28/coinbase-notifies-customers-that-it-will-turn-over-court-ordered-data/#390113ca1431>.

⁴⁹ *Report of Foreign Bank and Financial Accounts (FBAR)*; IRS <https://www.irs.gov/businesses/small-businesses-self-employed/report-of-foreign-bank-and-financial-accounts-fbar>

⁵⁰ *Bitcoin, FBAR, and the Offshore Voluntary Disclosure Program: A Primer for Expats*; Greenback Expat Tax Services (March 22, 2018) <https://www.greenbacktaxservices.com/blog/expat-taxes-on-bitcoin-fbar/>.

ury’s Financial Crime Enforcement Network (FinCEN) put out guidance on this regard starting in 2013⁵¹ and most recently in a letter to Congress.⁵²

More could be done, though, directly overseeing the crypto-ecosystem and at the intersections of the traditional financial sectors, *e.g.*, banking and payments networks, to perform KYC and to minimize the risk of the illicit use of blockchain networks.

Crypto-Exchanges and Wallets—Critical Gateways

Crypto-exchanges and digital wallet companies, if properly regulated, may provide one of the most critical gateways to protect against such illicit transmissions of value. Both crypto-exchanges and digital wallets provide customers the ability to store crypto-assets and transact electronically. (Many provide fiat currency services as well.)

This gateway to effect public policy is particularly important as crypto-exchanges allow for direct public access. In contrast, traditional securities and derivatives exchanges are accessed through intermediaries such as banks, broker-dealers or futures commission merchants (FCM), giving authorities important gateways to monitor and enforce the law. Thus, in the crypto-world, tax authorities and financial crimes enforcement will have to look to exchanges, custodians, investors or blockchain forensics companies, for reporting on crypto-transactions, taxable gains or losses, and any illicit activity.

In the U.S., in the absence of Federal registration, crypto-exchanges are required to comply with money transmission laws and to register in each state according to those individual state laws. This is a cumbersome and inconsistent process even for those well-meaning companies seeking to comply. Few exchanges have done so in all jurisdictions, raising questions of possible noncompliance. New York State, through its BitLicense, has acted to bring exchanges within enhanced money transmission laws.⁵³ Federal registration and oversight—through commodities and securities laws—would be a better public policy solution than this current patchwork approach.

Japan moved in 2017 to regulate crypto-exchanges primarily for money transmission and their custodial duties. Korean authorities banned exchanges from trading for anonymous accounts⁵⁴ and subsequently began investigating numerous exchanges for fraud and other misconduct.

As many jurisdictions around the globe, however, do not yet have specific regulatory regimes governing crypto-exchanges it puts an even greater burden on U.S. authorities, financial sector and laws. “There are significant challenges to investigating foreign virtual currency businesses, because most jurisdictions do not regulate and supervise virtual currency businesses,” a Treasury official wrote in the letter FinCEN sent to Congress in February 2018.

Decentralized Crypto-Exchanges—Challenges Ahead

Decentralized crypto-exchanges, still only a modest portion of the crypto-markets, may present even greater challenges. These exchanges provide for peer-to-peer trading based upon open-source algorithms with no centralized platform and no custody of funds. Thus, decentralized exchange protocols, might help provide a solution for the security of customer funds, if they truly don’t hold those digital assets. On the other hand, though, they may pose additional challenges to authorities trying to guard against illicit activities, particularly for crypto-to-crypto trading.

If decentralized exchanges facilitate trading of fiat currency *vs.* cryptocurrency, regulators might be able to implement policy by restricting regulated intermediaries or their customers in transacting with such platforms.

Ensuring for Financial Stability

It is important to ensure that blockchain technology, cryptocurrencies and crypto-exchanges do not undermine financial stability, in normal times or in stressful economic times.

Financial Stability Board—Initial Assessment

⁵¹FIN–2013–G001; *Application of FinCEN’s Regulations to Persons Administering, Exchanging, or Using Virtual Currencies*; Department of Treasury (March 18, 2013) <https://www.fincen.gov/sites/default/files/shared/FIN-2013-G001.pdf>.

⁵²Letter to Senator Ron Wyden, FinCEN (February 13, 2018) <https://coincenter.org/files/2018-03/fincen-ico-letter-march-2018-coin-center.pdf>.

⁵³Department of Financial Services *BitLicense Regulatory Framework*; New York State (June 24, 2015) https://www.dfs.ny.gov/legal/regulations/bitlicense_reg_framework.htm.

⁵⁴S. Korea bans anonymous cryptocurrency trades; BBC NEWS (January 23, 2018) <http://www.bbc.com/news/business-42784384>.

The Financial Stability Board (FSB), an international group that makes recommendations about the global financial system, stated in its open letter in March 2018 to the G20 heads of state, that “The FSB’s initial assessment is that crypto-assets do not pose risks to global financial stability at this time.”⁵⁵ They noted that even at their peak earlier this year, the overall market value was less than 1% of global GDP.

The current market value of all crypto-assets is approximately \$250 billion relative to global equity markets of approximately \$80 trillion as of 2017 year-end⁵⁶ and global debt outstanding as of March 31, 2018 of approximately \$250 trillion.⁵⁷ The world’s 190,000 tons of gold⁵⁸ are worth about \$7 trillion in aggregate at recent market prices of \$1,243 per ounce.

The FSB noted, however, that their assessment could change if crypto-finance became more interconnected with the core of the regulated financial sector. In that regard, it is worthwhile to consider three areas worthy of monitoring: (1) leverage in crypto-markets; (2) market infrastructure blockchain initiatives; and (3) central bank digital currencies.

Leverage in Crypto-Markets

Given the high volatility of crypto-assets, significant leverage could add to instability and stress, particularly during down markets. While Bitcoin futures listed at CME and CBOE require nearly 50% margin, most crypto-exchanges allow for much lower margin (and thus higher leverage) when trading Bitcoin and many other crypto-assets. BitMEX provides 100:1 leverage (only 1% margin) for Bitcoin trading. Many other exchanges allow offer leverage above 10:1.⁵⁹ Furthermore, given that many exchanges lack transparency and remain unregulated, it may be challenging for central banks and others responsible for financial stability to influence the amount of leverage in crypto-markets or get an accurate window into these markets.

Market Infrastructure—Blockchain Initiatives

Blockchain technology and other forms of distributed ledger technology raise the possibility of replacing various centralized market infrastructures. This could lower costs, limit counterparty risks, promote innovation and economic inclusion. It may also lower the systemic risks associated with centralized market infrastructures for payments, clearing, settlement and other shared functions. Though Bitcoin is now nearly 10 years old, these technologies are still untested in any economy-wide (or even enterprise-wide) production. Any widescale use of blockchain technology within the financial sector will need to be considered in light of their potential resilience to various risk vectors—economic, cyber, operating and otherwise.

Possibly most relevant to this Committee’s work, there are efforts underway to use blockchain smart contracts to help automate post trade event management for uncleared swaps. The International Swaps and Derivatives Association (ISDA) is working with Regnosys to produce a digital version of ISDA’s Common Domain Model for numerous swap transaction and life cycle processes. The goal is to provide the market with a standard set of digital definitions and smart contracts to reduce costs and counterparty risk.⁶⁰

There are other clearing and settlement use cases of note, though as stated, none are live at this time. The Depository Trust and Clearing Corporation’s (DTCC) has delayed its initiative, working with IBM, to implement a permissioned blockchain for credit default swap clearing and record keeping at its Trade Information Warehouse.⁶¹ Nasdaq, partnering with blockchain startup Chain, is experimenting with a number of blockchain applications, including for clearing and settlement for pri-

⁵⁵To G20 Finance Ministers and Central Bank Governors; Financial Stability Board (March 13, 2018) <http://www.fsb.org/wp-content/uploads/P180318.pdf>.

⁵⁶Market capitalization of listed domestic companies; The World Bank (as of December 31, 2017) <https://data.worldbank.org/indicator/CM.MKT.LCAP.CD>.

⁵⁷Global debt monitor; Institute of International Finance (July 9, 2018) <https://www.iif.com/publication/global-debt-monitor/global-debt-monitor-july-2018>.

⁵⁸World Gold Council (as of July 13, 2018) <https://www.gold.org/about-gold/gold-supply/gold-mining/how-much-gold-has-been-mined>.

⁵⁹The Best Bitcoin and Cryptocurrency Trading Platforms; BITREVIEW (as of July 12, 2018) <https://bitreview.com/trade/bitmex/>.

⁶⁰ISDA Publishes Digital Iteration of the Common Domain Model; ISDA (June 5, 2018) <https://www.isda.org/2018/06/05/isda-publishes-digital-iteration-of-the-common-domain-model/>.

⁶¹Enterprises Building Blockchain Confront Early Tech Limitations; COINDESK (March 23, 2018) <https://www.coindesk.com/enterprises-building-blockchain-confront-tech-limitations/>.

vate securities transactions for non-listed companies.⁶² Overseas, the most noted initiative is that of the Australian Stock Exchange which announced last year that it would replace its entire clearing and settlement infrastructure with a permissioned distributed ledger-based solution developed by Digital Asset Holdings.⁶³

Central Bank Digital Currencies

Last, Bitcoin and cryptocurrencies has led to healthy debates within the central banking and economics communities on the pros and cons of central banks issuing retail central bank digital currencies (CBDC) and if so, the effects that might have on payment systems and the commercial banking system.⁶⁴ Central banks already issue digital currency, but only to commercial banks, in the form of bank reserves. The public—merchants and consumers alike—can only access paper currency or bank deposits. In the U.S. that is in the paper form is Federal Reserve Notes.

The debate is whether to utilize blockchain technology to give greater access to either central bank payment systems and/or reserves to merchants or the wider public. In part this is being considered by central banks in an effort to stay abreast of rapid changes in payment methods and means of commerce, such as mobile payments, digital wallets and in some countries, the decline in the use of paper notes. In addition, central banks may find that they will be reacting to private-sector initiatives to issue so-called ‘stable value’ tokens designed to have stable prices or values and tied to or backed by fiat currency. Though stable value tokens to date, such as Tether, have had many challenges, some observers think that such an effort has potential.⁶⁵

Thus, the question CBDC raises for financial stability is with direct access to central bank digital currencies what portion of consumer deposits would move away from commercial banks and what effects would such migration have on lending and the overall economy? Furthermore, in times of stress or financial uncertainty, the public might move a significant portion of their money away from commercial banks to the central bank, potentially aggravating instability in the financial sector.

Protecting the Investing Public

As noted above, the \$250 billion crypto-markets currently operate largely outside of traditional investor protection norms. This is in spite of the SEC repeatedly publishing advisories and making public statements that most ICOs and the crypto-exchanges trading in such tokens must comply with U.S. securities laws.

Thus, it is not surprising that the crypto-markets are now known for high levels of fraud, scams and manipulative behavior. I will now review the need for investor protection in each of the three segments of the crypto-markets: (1) crypto-tokens—ICO or issuer or based, (2) crypto-derivatives[,] and (3) cryptocurrencies (aka crypto-cash commodities). Following this, I will touch upon the critical need to address crypto-custodial functions.

Crypto-Tokens—ICOs or Issuer-Based

The burgeoning market and the economic realities of ICOs or issuer-based tokens has led to robust debates around the globe over the appropriate regulations to apply to their issuance and trading. The International Organization of Securities Commissions (IOSCO) board expressed its concerns in a statement stating that: “ICOs are highly speculative investments in which investors are putting their entire invested capital at risk. . . . the increased targeting of ICOs to retail investors through on-line distribution channels . . . —raises investor protection concerns. There have also been instances of fraud, and as a result, investors are reminded to be very careful in deciding whether to invest in ICOs.”⁶⁶

Individual countries’ securities regulators have also been active in releasing statements regarding ICOs, cryptocurrencies, and exchanges. IOSCO lists statements from 40 countries regarding ICOs.⁶⁷

⁶²*Nasdaq Exec: Exchange Is ‘All-In’ on Using Blockchain Technology*; THESTREET (April 23, 2018) <https://www.thestreet.com/investing/nasdaq-all-in-on-blockchain-technology-14551134>.

⁶³*CHESS Replacement, ASX is replacing CHESS with distributed ledger technology (DLT) developed by Digital Asset*; ASX (December 2017) <https://www.asx.com.au/services/chessreplacement.htm>.

⁶⁴*Central bank digital currencies*; Bank for International Settlements, Committee on Payments and Market Infrastructures (March 2018) <https://www.bis.org/cpmi/publ/d174.pdf>.

⁶⁵*Stable Coins Analysis: Is There A Viable Solution For The Future?*; COINTELEGRAPH (May 14, 2018) <https://cointelegraph.com/news/stable-coins-analysis-is-there-a-viable-solution-for-the-future>.

⁶⁶*IOSCO Board Communication on Concerns Related to Initial Coin Offerings (ICOs)*; IOSCO (January 18, 2018) <http://www.iosco.org/news/pdf/IOSCONEWS485.pdf>.

⁶⁷*Regulators’ Statements on Initial Coin Offerings*; IOSCO <https://www.iosco.org/publications/?subsection=ico-statements>.

In the U.S., it is now the case that most ICO related tokens, and the crypto-exchanges that list them must comply with securities laws. Unfortunately, though, most are not yet doing so. The SEC's effort to date has yet to bring this market into compliance.

We've already seen high levels of fraud and loss of funds in these markets. Currently, a growing and potentially significant portion of the capital markets—crypto-finance—is not benefiting from basic investor protections.

When determining what is an investment contract under their securities laws, Canada has a similar approach to that of the U.S. *Howey Test*.⁶⁸ Provincial regulators from Canada joined with state regulators in the U.S. in May 2018, in a coordinated action against ICOs named “Operation Cryptosweep” with nearly 70 open investigations and 35 enforcement actions.⁶⁹

The SEC to date has used public advisory statements, speeches, testimony and enforcement actions against some of the most obvious offenders but has a great deal of work ahead of them to bring the issuer-based crypto-market into compliance.

The SEC's Director of the Division of Corporate Finance, William Hinman, sought to give additional direction in a speech on June 14, 2018. He noted that “a digital asset transaction may no longer represent a security offering [where] the network on which the token or coin is to function is sufficiently decentralized—where purchasers would no longer reasonably expect a person or group to carry out essential managerial or entrepreneurial efforts.” In explaining that decentralization may reduce information asymmetries, he said: “[W]hen the efforts of the third party are no longer a key factor for determining the enterprise's success, material information asymmetries recede.” Moreover, “[a]s a network becomes truly decentralized, the ability to identify an issuer or promoter to make the requisite disclosures becomes difficult, and less meaningful.”⁷⁰

While the number of ICOs being sold under exempt securities offerings (*i.e.*, Reg D filings) is increasing, many ICOs are still sidestepping these requirements. Furthermore, while there are reports that a number of crypto-exchanges are in discussions with the SEC about registering as broker dealers and complying with Reg ATS, none have yet fully done so. That means that these exchanges are currently likely operating in the breach.

To bring greater clarity to these markets, the SEC must also determine how best to bring into compliance the over 1000 ICOs and numerous crypto-exchanges still in operation in the U.S. What remediation and possible penalties are appropriate? One petitioner recommended retroactive registration along with investor rescission rights. Some requirements, such as satisfying requirements to track beneficial ownership may be difficult for these past ICOs.

Another challenge is that though SEC Chair Clayton has been clear that nearly all of the ICO market need comply with securities laws, until more enforcement actions are brought, potentially litigated and upheld in court, many issuers and exchanges will possibly continue to skirt their obligations. As the SEC stated in its *Munchee Order*, it will take more than semantics and more than a token being functional on a network to be exempt from securities regulation.⁷¹

The crypto-markets have gotten some clarity with the SEC stating that the two largest coins, Bitcoin and Ether are not currently securities. There are strong cases to be made, though, that a number of the other large market cap tokens are non-compliant securities. If large market cap tokens, such as XRP (sold by Ripple) or EOS (sold by Block.one), are concluded to be non-compliant securities—there are strong arguments that they pass the *Howey Test* and are—exchanges offering trading in these tokens will need to comply with SEC regulatory requirements or cease offering these products.

Also, the SEC will need to decide if they might issue rules and interpretations specific to the crypto-space. To date, they have chosen not to do so, but with the advent of the Internet and electronic trading in the 1990s, the SEC issued a number of new regulations for those novel market developments. A similar approach could be adopted here.

⁶⁸ CSA Staff Notice 46–307, *Cryptocurrency Offerings*; Ontario Securities Commission (August 27, 2017) http://www.osc.gov.on.ca/en/SecuritiesLaw_csa_20170824_cryptocurrency-offerings.htm.

⁶⁹ *State and Provincial Regulators in U.S. and Canada Target Initial Coin Offerings*; the WALL STREET JOURNAL (May 21, 2018) <https://www.wsj.com/articles/state-and-provincial-regulators-in-us-and-canada-target-initial-coin-offerings-1526918512>.

⁷⁰ *Digital Asset Transactions: When Howey Met Gary (Plastic)*; William Hinman, SEC (June 14, 2018) <https://www.sec.gov/news/speech/speech-hinman-061418>.

⁷¹ *Order Instituting Cease-and-desist Proceedings Pursuant to Section 8A of the Securities Act of 1933, making Findings, and Imposing a Cease-and-desist Order* (Release No. 10445) (December 11, 2017) <https://www.sec.gov/litigation/admin/2017/33-10445.pdf>.

Crypto-Derivatives

If an exchange offers derivatives on cryptocurrencies, then that exchange must register with the CFTC either as a DCM or as a SEF. Exchanges that offer leverage or margin for the purchase of cryptocurrencies may come under the definition of offering ‘retail commodity transactions’ and thus also be required to register.

The CFTC has yet to finalize a proposed interpretation that may help determine the breadth of crypto-exchanges that will need to register.⁷² Under the CEA, the CFTC has jurisdiction over any retail commodity transaction entered into on a leveraged or margined basis that does not result in actual delivery of the underlying commodity within 28 days. Under a proposed CFTC interpretation, “actual delivery” occurs if within 28 days of execution, only if a full transfer of the cryptocurrency is transferred between the seller and buyer as recorded on the relevant blockchain (not merely on the exchange’s data base or wallet), whether it is reflected on the recipient’s private wallet and whether the recipient has control of the private key.

Given how crypto-exchanges’ transactions are currently being conducted for levered or margined cryptocurrency, many exchanges may be holding cryptocurrencies for retail customers that do not satisfy the “actual delivery” exemption. These crypto-exchanges therefore might be offering trading of a form of a retail commodity transaction subject to CFTC regulations.

Thus, the CFTC’s final interpretation with regard to the definition of ‘actual delivery’ will be important. At one end—nearly all of the crypto-exchanges offering margin to the retail public would need register with the CFTC. At the other end for the final interpretation—gaps in crypto-exchange market integrity and custodial duties oversight will persist.

The CFTC issued an advisory in May 2018 with respect to crypto-derivatives listings. The CFTC staff expressed guidance on enhanced procedures for exchanges and clearinghouses listing derivatives contracts on virtual currency. These enhancements include an expectation that exchanges, and clearinghouses enter into information sharing arrangements with the underlying crypto-spot market(s).⁷³

Another challenge for regulators is that blockchain technology provides for new algorithmic means to structure binary options and contracts for differences, all of which are derivatives under the jurisdiction of the CFTC. The bitcoin scripting language and smart contracts used on other networks provide ways to structure peer-to-peer derivatives which execute and settle automatically based upon pre-arranged conditions. These blockchain based derivatives could reference any commodity—agricultural, metals, energy or financial. The CFTC and other regulators will want to ensure that this new technology does not presage a new and growing unregulated or dark swaps market.

Cryptocurrencies (aka Crypto-Cash Commodities)

Gaps in investor protection also have developed for crypto-exchanges solely trading cash cryptocurrencies. As previously discussed, crypto-exchanges currently have limited guardrails against front running, fraud, or other manipulative practices. There have been repeated reports of manipulative behavior on these exchanges. There have been repeated reports of stolen customer funds through cyber hacks. As mentioned, the FIA expressed its apprehension about the lack of transparency and regulation of the crypto-cash commodities markets underlying Bitcoin futures.

Currently nearly 70% of the crypto-markets’ \$250 billion total capitalization is represented by the five cryptocurrencies which have either been designated by the SEC as not securities (Bitcoin and Ether)⁷⁴ or were forks off of Bitcoin or Ether (Bitcoin Cash in 2017, Litecoin in 2011, Ethereum Classic in 2016).

The CFTC has general anti-fraud and anti-manipulation authorities with regard to spot transactions in these crypto-cash commodities, such as Bitcoin or Ether. This authority is critical for cryptocurrencies referenced in the derivatives markets but may be increasingly important as well for retail investors in crypto-cash commodities. The agency, though, does not currently have express registration or plenary rule writing authorities with regard to cash commodities.

One troubling recent development highlights the need for such authorities. The CME was unable to get underlying transaction data from the four crypto-exchanges upon which they rely for the Bitcoin index referenced by their Bitcoin futures contract. It’s been reported that these four exchanges (Bitstamp, Coinbase, Itbit, and

⁷² *Retail Commodity Transactions Involving Virtual Currency*—80 FR 60335.

⁷³ CFTC Staff Advisory No. 18–14 (May 21, 2018).

⁷⁴ *Digital Asset Transactions: When **Howey Met Gary** (Plastic)*; William Hinman, SEC (June 14, 2018) <https://www.sec.gov/news/speech/speech-hinman-061418>.

Kraken) refused to provide the data until the CFTC stepped in with subpoenas.⁷⁵ It is critical to the functioning of any crypto-derivatives markets that both self-regulatory organizations and government regulators have ready access to trading data for the underlying referenced crypto-cash commodities.

The SEC is grabbing with similar issues with regard to its review of possible crypto-related ETFs and crypto-investing by mutual funds. The SEC has rejected a number of filings for Bitcoin ETFs, starting with the Winklevoss Bitcoin Trust (COIN ETF) in March 2017. The SEC stated two requirements that the exchanges had not must satisfied in order to list a Bitcoin ETF: “the exchange must have surveillance-sharing agreements with significant markets for trading the underlying commodity or derivatives on that commodity. And second, those markets must be regulated.” It further cited “concerns about the potential for fraudulent or manipulative acts and practices in this market.”⁷⁶

In a subsequent staff letter published in January 2018, the SEC raised a series of questions regarding, amongst other things, appropriate valuation methods available for crypto-assets, liquidity of crypto-markets, custody of crypto-funds and potential manipulation in these markets.⁷⁷

Failing to better oversee the crypto-cash commodities markets also leaves investors vulnerable, illicit activity hard to control and custodial responsibilities to vagaries of state enforcement of money transmitter laws. The volumes, millions of customers, repeated hacks and reports of manipulative behavior, suggest that oversight of crypto-exchanges trading solely in crypto-cash commodities is worthy of consideration.

Furthermore, as the CFTC staff discussed in their recent advisory, there are differences between crypto-cash commodities and other commodities. They said:

“To date, virtual currencies have gained prominence as they are bought and sold for investment, speculative, or financial purposes. Those transactions greatly predominate over commercial uses of virtual currency—such as to purchase goods and services—which are still developing. Thus, virtual currencies differ from commodities like oil and gold where commercial uses predominate or at least provide points of comparison. At the same time, virtual currencies differ from financial indices and other commodities for which robustly-regulated markets facilitate price verification and provide insight into the reasons for price changes.”⁷⁸

Gemini Trust Company (Gemini), the crypto-exchange founded by Cameron and Tyler Winklevoss, recently proposed setting up a self-regulatory organization (SRO) for crypto-exchanges dealing in crypto-cash commodities or what they call ‘virtual commodities.’ In the medium post calling for the SRO, Cameron and Tyler Winklevoss articulate a view that virtual commodities should have an additional layer of oversight beyond that which other cash commodities have stating: “Cash markets for virtual commodities, however, are unique inasmuch as: (a) the commercial use-cases for virtual commodities are still developing, (b) there is strong speculative interest, (c) these marketplaces involve a large number of individual participants, and (d) technology makes individual transaction costs exceptionally low (on a relative basis) as compared to other physical commodity spot markets.”⁷⁹

It is a logic for additional oversight of crypto-cash commodities somewhat consistent with the recent CFTC staff advisory discussion. Though the logic is directional sound, I believe that a Federal oversight regime is appropriate if we are to achieve the public policy goals for crypto-exchanges of guarding against illicit activity, ensuring stability, protecting investors and promoting market integrity, with SROs playing an important supportive role as they do in securities and derivatives markets.

Given frauds and other concerns in the retail foreign exchange markets, Congress, in the 2008 Farm bill, included provisions for the first time for CFTC registration and regulation of retail foreign exchange dealers (RFEDs). Similarly, the CFTC and

⁷⁵ *What Do We Know About the CFTC Price Manipulation Probe*; COINTELEGRAPH (June 15, 2018) <https://coingeography.com/news/what-do-we-know-about-the-cftc-price-manipulation-probe>.

⁷⁶ SEC Release No. 34-80206; File No. SR-BatsBZX-2016-30; March 10, 2017 <https://www.sec.gov/rules/sro/batsbx/2017/34-80206.pdf>.

⁷⁷ Staff Letter: *Engaging on Fund Innovation and Cryptocurrency-related Holdings*; SEC (January 18, 2018) <https://www.sec.gov/divisions/investment/noaction/2018/cryptocurrency-011818.htm>.

⁷⁸ CFTC Staff Advisory No. 18-14 (May 21, 2018).

⁷⁹ *Proposal for a Self-Regulatory Organization for the U.S. Virtual Currency Industry*; Cameron Winklevoss (March 12, 2018) <https://medium.com/gemini/a-proposal-for-a-self-regulatory-organization-for-the-u-s-virtual-currency-industry-79e4d7891cfc>.

Congress might wish to consider allowing retail cryptocurrency exchanges to register as RFEDs, though cryptocurrencies are not foreign currency, and while ensuring that cryptocurrencies remain distinct from fiat currencies for other parts of the commodities law.

Or Congress may wish to consider if it would be more appropriate to provide the CFTC—or another agency—with general authorities to write rules for crypto-cash commodities markets, including possibly requiring registration for trading on crypto-exchanges solely dealing in cryptocurrencies, aka crypto-cash commodities.

Custodial Functions

The Wall Street Journal reported this week: “Regulatory gaps and insufficient levels of defense have made some exchanges simple to breach.”⁸⁰ Seven hacks to date in 2018 have led to \$800 million in customer funds being stolen from crypto-exchanges. Over \$1.6 billion has been stolen in 56 reported hacks since 2011. No doubt, more has been lost to unreported thefts and cyber-attacks.

Though Bitcoin and many blockchains themselves have been generally resistant to hacks, with the integrity of their ledgers preserved, there are significant weaknesses in other areas and layers within the crypto-ecosystem.

Unlike traditional exchanges, crypto-exchanges hold significant customer funds in digital wallets—a state of affairs that directly contradicts the principles of decentralized user-based control of digital assets upon which Bitcoin was initially built. The aggregate of these customer crypto-assets is then represented on a particular token’s blockchain associated with the public keys of the exchange, not the individual customers. As mentioned previously, Coinbase reports to have custody of over \$20 billion in customer crypto-funds.

In contrast, customers trading on traditional securities exchanges with intermediated access have their securities recorded at a transfer agent, and held by a broker or dealer, not the exchange. Customers trading on derivatives platforms, have their trades recorded and margin posted at regulated clearing houses and FCMs.

Exchanges are exploring whether new approaches, such as multi-signature wallets, might aid in protecting the security of customer funds.⁸¹ But for now, the existing system is operating with a glaring gap in investor protection. With well over 90% of daily trading volume in Bitcoin occurring through crypto-exchanges rather than being recorded as a transaction directly within the blockchain, and with the public accessing these exchanges without the benefit of regulated intermediaries, it is critical to put in place Federal requirements for the custody of crypto-assets.

In the U.S. to date, the only regulatory safeguards have been through state-administered money transmission regulations. This approach—regulating exchanges’ custodial duties in the same manner that Western Union and MoneyGram are regulated—is not satisfactory.

In some countries, particularly Japan, authorities have required crypto-exchanges to register and meet certain custodial duties to protect customer funds stored in an exchange’s digital wallets.

The public policy goals should be the same, whether the asset is crypto in nature or a more traditional security or derivative. Exchanges should fully segregate customer funds and ensure that they not lose those funds and not use those funds.

When considering existing custodial rules, the specifics of blockchain technology, public keys and cryptography will need to be considered. New technologies, such as multi-signature controls might protect customers or fulfill certain custodial responsibilities. Added safeguards, need be considered for the private keys associated with exchanges’, asset managers’, banks’ or regulated intermediaries’ public keys. Additional cyber-security and other safeguards might be appropriate, particularly given the numerous losses and hacks that have occurred in the past.

Conclusion

In conclusion, blockchain technology has a real potential to transform the world of finance. Though there are many technical and commercial challenges yet to overcome, I’m an optimist and want to see this new technology succeed. It could lower costs, risks and economic rents in the financial system.

For broad adoption—both as a technology solution and as part of the capital markets—the technology and its various applications need to come within existing public policy frameworks. Basic norms and principles to guard against illicit activity,

⁸⁰ *Cryptocurrency Exchanges Are Getting Hacked Because It’s Easy*; WALL STREET JOURNAL (July 16, 2018) <https://www.wsj.com/articles/why-cryptocurrency-exchange-hacks-keep-happening-1531656000>.

⁸¹ *The sad state of crypto custody*; TECHCRUNCH (February 1, 2018) <https://techcrunch.com/2018/02/01/the-sad-state-of-crypto-custody/>.

ensure for financial stability, and protect investors and market integrity, while promoting innovation, should consistently guide public policy.

Clear rules of the road also will allow firms—both incumbents and start-ups—to more fully explore investing in crypto-assets or blockchain technology. Today, start-ups have an advantage as incumbents do not take the same reputational and regulatory risks that startups generally are willing to take. Startups, so to speak, are more willing to beg for forgiveness while incumbents more often need ask for permission.

Bringing clarity and compliance will have its challenges. There are numerous crypto-exchanges and thousands of ICO launched tokens in significant non-compliance. Congress and this Committee have a role to play as well, monitoring developments, overseeing compliance, and, when appropriate, updating laws. It also will be critical that sufficient resources be provided the CFTC, SEC and other agencies to adequately oversee crypto-markets, especially as these markets have continued to grow.

Market participants, the investing public, entrepreneurs, technology developers, regulators and Congress all will play a role. In particular, crypto-exchanges and ICOs should now seek to comply with the law to fullest extent possible.

The public, blockchain technology, and the financial system will all reap the benefits.

Thank you again for inviting me today, and I look forward to your questions.

The CHAIRMAN. Thanks, Mr. Gensler.

Mr. Ness, 5 minutes.

**STATEMENT OF LOWELL D. NESS, J.D., MANAGING PARTNER,
PALO ALTO OFFICE, PERKINS COIE LLP, PALO ALTO, CA**

Mr. NESS. Thank you all for inviting me to testify this morning.

I certainly agree with everybody that has gone before me that this technology does have the potential to be transformative.

One of the questions I get asked a lot is why don't we just call these things securities? We have securities regulations. We could create a scenario where these things get registered and then become *freely tradable*, so why not just call them securities, deal with the existing laws? The problem with that is they exhibit some characteristics of securities during certain phases and not in others; especially when we get to full functionality when it is a truly completed product that is being sold, the intention of that product is to be used in a network, and that really can't happen—at least not at the speed of software, which is really the fundamental principle here behind these decentralized protocols is to allow for value transfers truly at the speed of software. You can't do that if everybody has to be a broker-dealer and all the intermediaries have to interact in a way that would be appropriate for securities.

We need to come up with a fairly novel and pragmatic approach to dealing with the fact that there needs to be some investor protections, particularly in the early stages while the things are a PowerPoint deck and an idea in somebody's mind. But find ways to create some clarity around how and when it goes from being sold as a security to being sold as a commodity. And that is a very important imperative right now because we are seeing so much activity, frankly, and the threat of people going offshore for lack of clarity is a very real one.

I will say in my 25 years in Silicon Valley, I have not seen circumstances where you go to a meet-up in places like Palo Alto or even San Jose and you see regulators from Zug, Switzerland; Singapore; Hong Kong; and Bermuda *et cetera*. To avoid any kind of race to the bottom, I do think that there is a serious imperative about getting something done before we have a situation where we

are trying to entice people back into the country, because then the standards would really have to be lowered to do that. I think we have an opportunity now if we get ahead of the true flight, but that is an important idea around why we need some of the bright lines.

To that end, I did in some of my written testimony include some materials and a proposed regulatory framework that both talk about what the existing laws and how the existing laws treat these so-called utility tokens, and there is a 50-page memo on how the existing laws work. To avoid having to go through that 50-page memo type analysis with each and every one of these, I think the bright lines are really what is necessary.

There is a regulatory framework that we have been thinking a lot about how that would create that set of bright lines that would enable the regulators and the companies going out there to really know how to sort the good ones from the bad ones. I do think that starts with this test around how we in the investment contract analysis for regulating securities as securities in the primary offering, if they are being sold pre-functional—before they are fully functional. But coming up with ways to say that once they are fully functional, how do we let them now trade as commodities effectively, and the trading is important because as I said, this is the movement of value. To have value, it needs a price and the markets really are a necessary part of this. The fact that there are secondary markets is a key part of this. They need to be able to trade in those markets to establish price. They also need to be able to be used in their networks as non-securities, and so we need to come up with ways to say when they are being sold to investors as investments, let's treat them like securities. When they are being used in the network or they are being traded in the secondary markets, let's call them commodities.

Thank you.

[The prepared statement of Mr. Ness follows:]

PREPARED STATEMENT OF LOWELL D. NESS, J.D., MANAGING PARTNER, PALO ALTO OFFICE, PERKINS COIE LLP, PALO ALTO, CA

U.S. Regulatory Framework for Digital Assets

Introduction

We support the regulatory mission of investor protection and full and fair disclosure. We also support aggressively dealing with fraudulent actors in the blockchain technology industry. We believe it is essential to both market participants and the regulatory community that bad actors are dealt with through targeted strikes and regulatory action. We also believe it is equally essential to provide clear guidance beyond enforcement actions to allow continued development and innovation around what many believe to be potentially transformational technology development. It is in that spirit that we welcome this engagement with the regulatory community toward defining a regulatory framework that best addresses market participant protection and continued growth and development of blockchain technologies.

Blockchain technology (also called “distributed ledger technology”) allows the creation of a software ledger that is distributed, meaning many copies of the ledger exist and are automatically kept in sync such that no one actor can alter the ledger without employing a defined consensus mechanism among the actors. This technology allows assets to be traded on a ledger that is not maintained by a centralized “trusted” actor. Blockchain technology allows ledger transactions to occur immediately, immutably and transparently, without the need for reconciliation of multiple proprietary ledgers. This is, arguably, the most fundamental change to ledger technology since double-entry accounting. Double-entry accounting helped trading counterparties trust each other. Blockchain technology removes the need for centralized trusted intermediaries to act as the go between for trading counterparties.

While the Internet enables the free flow of information, blockchain technology enables the free flow of value. More specifically, blockchain technology enables the creation of many types of digital assets, including digital currencies, digital goods and services, software tokens and digital securities (*e.g.*, tokenized debt or equity).

This memorandum addresses the regulatory framework for the application of U.S. securities laws and commodities laws to these various types of digital assets, with a focus on the treatment of utility tokens. Tokenized goods and services are non-fungible tokens that are merely intended to represent specific goods or services, so their regulatory status should simply follow from the regulatory status of the good or service they represent. Other digital assets require somewhat more complicated analysis to determine their regulatory status.

Digital Currencies, Digital Securities & Utility Tokens

At one end of the spectrum, digital currencies are fungible tokens that have no other marketed functionality than use as a medium of exchange or stored value. These types of tokens (*e.g.*, Bitcoin) are subject to various U.S. Federal and state as well as foreign money transmission laws, are treated as property under U.S. tax laws, and are treated as commodities under U.S. commodities laws. Offers and sales of digital currencies should not be viewed as securities under the *Howey* test, absent unusual facts (such as promising efforts to maintain secondary market liquidity or token architectural features like burning tokens intended to reduce supply and increase the value).

At the other end of the spectrum, digital securities are tokenized traditional securities (*e.g.*, debt or equity) or investment contract type securities that offer a direct financial return from an identifiable issuer. These types of tokens would clearly be securities and would generally not be subject to commodities laws or money transmission laws *per se*.

Utility tokens are intended to be used by users of a software network and do not represent an equity interest (or any other corporate obligation), but they do attract speculative resellers, which implicates the *Howey* test. The *Howey* case law is highly nuanced and, therefore, challenging to interpret, leading to uncertainty. As a general matter, U.S. Federal securities laws were developed and have evolved primarily for and around equity securities (and other corporate obligations). There is much less clarity around investment contract type securities, particularly investment contract type securities that offer no direct financial return, but nevertheless enjoy robust secondary markets.

The *Howey* test requires a reasonable expectation of profits. A purchaser may be led to expect profits either from a direct financial return (*e.g.*, an ownership interest in a business or a promise of payment) or from a rising price in secondary markets. Ordinarily, if there is no direct financial return, and the object being sold has never been sold before, there would be no reasonable expectation of profits. This is because a reasonable purchaser would not expect a novel product to have any secondary market liquidity. The fact that every team, every time, seems to be able to generate an immediate secondary market for its newly minted utility token, is astonishing, but has become a fact of life. At this point, the expectation of profits from secondary market activity has become a given. It would be difficult to point to another phenomenon where this was the case. This is the first factor in the utility token analysis that is arguably unique.

An expectation of profits is not, however, sufficient to form an investment contract. The expectation of profits must be based on the efforts of others. Most investment contracts, including *Howey* itself, involve the promise of direct financial returns. When a promoter offers a financial return to the purchaser, the efforts of others continue for the life of the financial return, which would mean indefinitely in the case of an ownership interest in a going concern. When no direct financial return is offered, however, and the only expectation of profits comes from the hope of a rise in price in secondary markets, the efforts of the promoter are only relevant **so long as** the product is being developed by the promoter. This temporal qualification is the second factor in the utility token analysis that is unique and leads to the concept of mutability, discussed in our memorandum to the SEC dated March 26, 2018 regarding the Investment Contract Analysis of Utility Tokens. As discussed in that memorandum, the token itself is never a security, but the facts and circumstances surrounding the sale of the token likely constitute an investment contract while the token is in the development stage because the buyer's expectation of profits are based on the seller's efforts to complete development of the token. Once the token has been fully developed and the facts and circumstances no longer support an investment contract conclusion, the offer and sale of the token should be treated as the sale of any other commodity trading in spot markets. As a result,

under the *Howey* test, token sale agreements could constitute investment contracts under some circumstances but not others.

Some would prefer to resist the implications of mutability by simply treating all tokens as securities forever. Treating all tokens as immutable securities, however, (i) would not be analytically consistent with existing law and (ii) would not allow tokens to be used for their intended purpose—access to products and services on a network, which would inevitably cause development to relocate abroad.¹ China, whose securities laws arguably are not as nuanced, took a binary approach to regulation and banned all token sales in China instead of adopting tailored protections that would enable the development of the technology to continue in China. We believe the law and guidance around what constitutes an investment contract should be clarified. We believe that the industry’s and the regulators’ interests are aligned in establishing clear rules and appropriate investor protections so that capital formation in blockchain technology is not derailed and development can continue to flourish in the United States.

Proposed Regulatory Framework for Utility Tokens

To remedy the uncertainty and confusion in this space, we are part of a group of academics, venture capital firms and law firms practicing in this area that has proposed the following regulatory framework to serve as the basis for a more detailed non-exclusive safe harbor that would help provide guidance to the industry on what constitutes an “investment contract” and how the investment contract law and guidance should apply to utility tokens with respect to primary sales, resales and use of the tokens for their intended purposes. Similar to the steps the SEC took by putting in place Regulation D, a non-exclusive safe harbor to address the uncertainty caused by *SEC v. Ralston Purina* in the private placement arena, we believe the proposed framework outlined below could be codified in a no-action letter or series of no-action letters that could ultimately lead to a rulemaking around a safe harbor that will assist in relieving the regulatory uncertainty around utility tokens. The goals of the proposed framework are to (i) establish clarity for the industry, (ii) permit use of tokens for their intended purposes (*i.e.*, on their software platform) and (iii) establish appropriate investor protections for both primary sales and resales of tokens, with emphasis on eliminating trading manipulation.

The industry’s need for clarity is obvious. Currently, the vast majority of token sales are smaller token sales that have not been reviewed by counsel or that are merely attempting to follow precedent transactions in a highly nuanced area with varying models and no bright line rules. The regulators would also benefit from clarity. The proposed framework would require affirmative consent to jurisdiction, which has been challenging in light of the global and distributed nature of token sales. The proposed framework allows regulators to (i) define the contours of jurisdiction (and therefore responsibility), (ii) avoid the incongruent result of defining all tokens as securities (while tokens have security-like characteristics at one stage, the regulatory scheme must also permit use of tokens for their intended purposes) and (iii) provide an efficient structure for continued capital formation.

The proposed framework is largely based on the application of existing case law and regulatory principles, such as Rule 144 and Rule 701, to tokens, but proposes bright lines to clarify existing case law and regulation in a way that is practical and useful for all constituents. The proposed framework has been vetted by, and has the support of, many of the key players in the industry. We believe the proposed framework works well from the perspective of both industry and the regulators by balancing market participant protections and capital formation.

In general, offers and sales of tokens meeting the specified conditions would not be deemed securities transactions (except for purposes of application of general anti-fraud and manipulation rules, such as Rule 10b–5) once the tokens have achieved either full functionality or full decentralization (as described below) and may be exchanged as non-securities in secondary markets subject to the general anti-fraud and manipulation rules of each of the CFTC and the SEC. Token sellers would, however, impose certain investor protection requirements tailored to each stage. The no-action letter(s) and any eventual safe harbor would be non-exclusive as there will be tokens clearly purchased for consumptive purposes, such as non-fungible tokenized goods and services. The principles of the proposed framework are as follows:

Pre-Functionality—Until the token achieves full functionality, offers and sales of tokens would generally constitute investment contract type securities under

¹For example, a social network that uses a token as a micro payment for a micro task like submitting a blog post, would be engaged in the unregistered and, presumably, non-exempt sale of a security if the token were a security.

Howey, unless a reasonable purchaser is purchasing with consumptive intent.² In this case, the token should generally be treated as a security unless use of the token (as opposed to resale) is reasonably certain. As such, this stage would include the following features:

Primary sales—Existing securities laws would apply to primary sales of the token. Primary token sale agreements would continue to be generally treated as securities based on the investment contract analysis under *Howey*. Primary sellers of tokens would be able to rely on available exemptions from registration (*e.g.*, Rule 506(b), Rule 506(c), Regulation S, Rule 701) and the SEC would retain full regulatory authority to enforce violations under existing Federal securities laws.

Resales—Any resales or assignments of the primary token purchase agreement, which is the security under *Howey*, by purchasers or affiliates of the token creator would also need to rely on existing resale exemptions under the securities laws. Resales of the token would also be subject to the special resale lockup and resale volume restrictions described below.

Use for Intended Purpose—Tokens would be able to be earned or used as intended through the network, so long as either (i) resale is not possible,³ or (ii) the network on which the tokens can be used will be shut down within some reasonably finite period, say 6 months (*i.e.*, these are testnet tokens that have no resale value).

Full Functionality—Once the token achieves full functionality, offers and sales of tokens would generally not constitute investment contracts under *Howey*. Software networks, however, generally require ongoing updates and upgrades, so it may be appropriate to create limited but ongoing investor protections.⁴ As such, this stage would include the following features:

Primary Sales—Primary sales of tokens below the Per Purchaser Limit (described below) would be able to be made without being subject to lockup or volume restrictions. Larger purchasers, however, would need to be accredited investors and are subject to the special resale lockup and resale volume restrictions described below. Tokens would be able to be gifted or otherwise distributed to users, service providers, strategic partners and other participants without an exchange of money, including mining, also without being subject to lockup or volume restrictions.⁵

Resales—Tokens would be able to be traded on exchanges or resale platforms as non-securities, other than for purposes of the general anti-fraud and manipulation rules, such as Rule 10b-5.⁶

Use for Intended Purpose—The token would be able to be earned or used on the network for its intended purpose (*i.e.*, on their software platform) without being subject to lockup or volume restrictions.

² Consumptive intent, as opposed to investment intent, would generally be established if the purchaser is only able to use the token for its intended purpose and is not able to resell the token for profit. The existence of consumptive intent was a key determinant, for example, in *United Housing Foundation, Inc. v. Forman*, 421 U.S. 837 (1975).

³ During this stage of token development, we believe that resale should either be extremely unlikely (*i.e.*, in the case of testnet tokens) or effectively impossible. More practical (*i.e.*, less stringent) resale lockup mechanics may be more appropriate for tokens that achieve full functionality.

⁴ Ongoing software updates and upgrades constitute ongoing efforts of others under *Howey*, but they are not likely to rise to the requisite level of efforts to form an investment contract. The case law is particularly challenging to apply to the facts in this area, which makes it difficult to determine whether investor protections should apply. Nevertheless, we believe that limited ongoing investor protections, even at this stage of token functionality, are essential in ensuring that capital raising is not derailed in this industry by pump and dump or get rich quick schemes taking advantage of immediate liquidity in secondary trading markets for tokens.

⁵ For equity securities, we would typically consider many of these non-monetary issuances of stock to be “sales.” For tokens, there are strong policy objectives around bolstering the use of the tokens for their intended purposes. As such, non-monetary transfers of tokens for the purpose of seeding potential users to drive network adoption or for purposes otherwise related to the token’s usage should be permitted. To the extent a so-called “airdrop” is announced in advance as a way to drive up the trading price of the token associated with the blockchain on which a new token is being airdropped, we would consider this a marketing practice inconsistent with the safe harbor.

⁶ There are many variations in the market on token trading platforms, from true peer-to-peer to decentralized exchanges that provide information supporting peer-to-peer trading or, in some cases, matching engines, but that do not take custody of tokens, to hosted-wallet exchanges running full services as an exchange. How to handle exchanges and the mechanics of our proposal will need significant further discussion with the Staff. We do not believe, however, that it would be appropriate to require all exchanges trading fully functional tokens to be registered as Alternative Trading Systems. We believe it is essential to apply general anti-fraud and manipulation rules to these open exchanges, but it would be counterproductive to treat them as ATS’s with inapposite rules developed around equity securities and other corporate obligations.

Full Decentralization (Protocol Tokens)⁷—If a token achieves full decentralization (not all will), the token would fall entirely outside of *Howey* since there is no longer an issuer or promoter delivering ongoing software updates or upgrades that could potentially constitute the requisite efforts of others under *Howey*. As such, a token that achieves full decentralization would be not be deemed a security for any purposes other than the general anti-fraud and manipulation rules, such as Rule 10b-5.

Key Defined Terms

Full Functionality—A token achieves full functionality when a token holder can use the token for its intended purpose (marketing test), or a token holder can use the token in some meaningful way (qualitative use test), or the network in which the token is to be used is fully functional in accordance with its whitepaper (operational test), or the token’s consensus mechanism is working and blocks are being published (layer 1 protocol token test). The foregoing are examples of functionality criteria, but there may be other indicia of functionality that require further discussion in the context of a specific no-action letter. Protocol tokens (*i.e.*, tokens that allow other developers to build application tokens on top of the protocol token network) should be deemed to have immediate full functionality when the protocol tokens can be used for their intended purpose by developers even if the applications have not been developed yet, while application tokens would require their marketed features to be built before achieving full functionality.

Per Purchaser Limit—This could be a dollar limit akin to crowdfunding concepts, but would make more sense under *Howey* as a limit that indicates consumptive intent. Each primary token seller could establish a limit based, for example, on the number of tokens a user might use within a given period of time. In some cases, tokens are meant to be purchased by developers who are building other applications that will make use of the tokens and will need a larger quantity of tokens for their separate development project than would a typical user.

Full Decentralization—A token achieves full decentralization when the token creator no longer has control of the network based on its ability to make unilateral changes to the functionality of the tokens, or based on the number of network nodes controlled by the broader community, or based on the code being forkable and open source, or based on it being a permissionless network (any node can join), or based on affiliated hashpower (proof of work), or based on affiliated holdings (proof of stake). Again, these are just examples of indicia of control criteria that require further discussion in the context of a specific no-action letter.

Primary Token Seller Conditions for Safe Harbor

Special Resale Lockup and Resale Volume Restrictions—Primary sales other than for fully decentralized protocol tokens (*i.e.*, for either Pre-Functionality or Full Functionality tokens), would need to include a lockup that permits use but not resale for the period ending on the later of (i) 6 months following purchase, and (ii) achievement of full functionality. In addition, purchasers and affiliates of the token creator would need to agree to resale volume limitations.

Consent to Jurisdiction—Primary token sellers would need to consent to jurisdiction of the applicable regulators.

Consent to Anti-Fraud Rules—The primary token seller would need to also agree to the application of the general anti-fraud and manipulation rules, such as Rule 10b-5 under Federal securities laws with respect to any tokens sold under all circumstances.

Public Disclosure—Any information that the primary token seller provides regarding features and use of the network would need to be made publicly available. To achieve full functionality, a white paper, superseding any prior white paper, would need to be published detailing present functionality and would need to focus on present features with only limited and very generalized discussion of future features, if any. Other disclosures may be appropriate and would need to be discussed in the context of a specific no-action letter.

Public Marketing—The token seller would not be permitted to market the token as an investment, but would be able to provide disclosures consistent with Rule 506(c) and Rule 134. Any marketing materials made public would only be able to relate to the token’s functionality, not its resale value.

⁷ ETH is a good example of this type of protocol token that has become so decentralized it should not be deemed a security. For clarity, ETH is the protocol token for the Ethereum network, so this safe harbor provision would apply to ETH, but not necessarily to all ERC20 tokens running on top of the Ethereum network unless an ERC20 token is itself a protocol token. Also, for clarity, a protocol token may qualify as a token with full functionality irrespective of whether it has achieved full decentralization.

Legends/Smart Contracts—Primary token seller would need to enforce lockups.

Token Features—The tokens would not (i) have one or more features that make them a “security” under one of the other concepts in the definitions under the 1933 Act or 1934 Act, or (ii) constitute an (a) ownership interest, (b) equity interest, (c) a share of revenue, profit and/or loss, or assets and/or liabilities, (d) status as a creditor or lender, (e) claim in bankruptcy, (f) holders of repayment obligations, or (g) right to convert into an investment interest, all with respect to the token project or network application, or any legal entity.

Exchange Conditions for Safe Harbor

The conditions for an exchange to list a utility token as a non-security requires further discussion in the context of a specific no-action letter, including with respect to (i) the exchange’s role regarding FinCEN KYC/AML regulations; (ii) the exchange’s role relating to resale limitations on tokens; and (iii) consent to jurisdiction for enforcement of general anti-fraud and manipulation rules.

Reseller Conditions for Safe Harbor

Resellers would need to comply with any lockup and volume limitations.

Resellers would need to be subject to the general anti-fraud and manipulation rules, such as Rule 10b–5.

Conclusion

We believe that the above regulatory framework ensures the goals of investor protection, clarity for market participants and support for blockchain technology. While the SEC retains significant jurisdiction under the proposal, the CFTC would also retain the ability to regulate fraud and market manipulation in the token spot markets, in addition to its full authority to regulate any derivative token markets. FinCEN remains the primary regulator with respect to all KYC/AML requirements, and the FTC would also have jurisdiction for any consumer protection actions associated with misleading advertising.

ATTACHMENT

March 26, 2018

To: WILLIAM HINMAN, *Director*, Division of Corporation Finance
 AMY STARR, CHIEF, Office of Capital Markets Trends
 VALERIE SZCZEPANIK, *Assistant Director*, *Head* of the SEC Distributed Ledger Technology Working Group

From: Perkins Coie LLP

Re: *Investment Contract Analysis of Utility Tokens*

This memorandum discusses whether and under what circumstances so-called “utility tokens” would be securities as defined under the Securities Act of 1933, as amended (the “**Securities Act**”).¹

Executive Summary

In *Howey*² and its progeny, including the cases discussed in the DAO Report,³ the Securities and Exchange Commission (the “**SEC**”) and the courts have laid out the characteristics of an “investment contract,” emphasizing that the analysis of what is and is not an investment contract can be based on the facts and circumstances surrounding each offer and sale. Inherent in any analysis based on facts and circumstances is the reality that the analysis may yield a different conclusion at different points in time as circumstances change. In the case of tokens, and the underlying blockchain technology, the market dynamics have, in fact, changed over time, as market participants have adjusted to a better understanding of both the technology and the applicable regulatory requirements. Currently, it is widely accepted that a pre-functionality sale of tokens may well constitute an “investment contract,”

¹ While other U.S. securities laws have slightly different, and in some cases broader, definitions of a security, the most immediate concern for utility tokens is whether a token sale to the general public may constitute a violation of Section 5 of the Securities Act. Outside the United States, except for Canada, we have not run into a jurisdiction where the securities laws would apply the investment contract test discussed in this memorandum according to local counsel. So far, utility tokens have been deemed non-securities in places like Switzerland, Singapore, Hong Kong, Bermuda, the Cayman Islands, and the British Virgin Islands, among others.

² *SEC v. W.J. Howey Co.*, 328 U.S. 293 (1946) (hereinafter, “**Howey**”).

³ *Report of Investigation Pursuant to Section 21(a) of The Securities Exchange Act of 1934* (Exchange Act Rel. No. 81207) (July 25, 2017) <https://www.sec.gov/litigation/investreport/34-81207.pdf> (hereinafter the “**DAO Report**”).

and hence a security, within the meaning of Section 2(a)(1) of the Securities Act. This conclusion flows from the likelihood that a reasonable purchaser expects to profit in the secondary market for the tokens based on the efforts of the token seller to build the network or application in which the token is used. Accordingly, most market participants are initially purchasing a pre-functionality token sale agreement, which is offered and sold in accordance with Rule 506(b), Rule 506(c) or Regulation S, and which represents a right, at a future time, to delivery of utility tokens. In this context, the pre-functionality token sale agreement is the security, and it is subject to the resale restrictions imposed by Regulation D or other applicable exemptions, under the Securities Act. At the point at which the utility tokens achieve a sufficient level of functionality, such that their value is no longer dependent on the efforts of others, the pre-functionality token sale agreement is effectively extinguished and the holder thereof receives delivery of the tokens. A token by—itself is never an investment contract—Dogecoin⁴ is simply a meme that can be transferred via blockchain operations. The investment contract arises from the understanding as to how the token will be developed into something of useful value. In this memorandum we discuss the legal analysis supporting our views with respect to the legality of these transactions and the legal status of the tokens, both pre- and post-functionality. We also discuss more broadly the legal framework in which token sales take place.

The key difference between (i) an equity offering or the forward sale of an extant commodity and (ii) an offering of utility tokens is the fact that equity is inherently a security by its nature and extant commodities are non-securities by their nature and that nature never changes. Equity fundamentally represents a right to a share of the profits of the issuer, so equity securities never “transform” from a security to a non-security because their fundamental nature does not change. The treatment of a contract as an investment contract, and hence as a security, however, is entirely based on a test that is driven by the facts and circumstances at the time of the offer and sale. Thus, it is possible for a contract for the sale of tokens to be an investment contract under one set of circumstances, while a subsequent contract for the sale of the same tokens is not an investment contract when sold under different circumstances. In this case, the transformation is not *de jure*, but arises from a change in the facts and circumstances, *i.e.*, *ipso facto*. Since one of the key facts underpinning the efforts of others element set out in *Howey* is the promoter’s efforts to build functionality, there may well be a different result with respect to an offer and sale made at a time when functionality exists, *versus* at a time when it does not. Indeed, if tokens are delivered to the pre-functionality token purchasers after **full functionality** has been created, the efforts of others element would no longer be met under *Howey*, and any subsequent resale of the tokens should not constitute an investment contract.

If we assume that the expectation of profits prong under *Howey* is always met based on today’s frothy secondary markets, and if we ignore the other prongs of the test, the only remaining question is whether the expectation of profits is sufficiently based on the efforts of others. The courts use objective criteria to determine when a reasonable purchaser expects to profit on the efforts of others, not the subjective mind set of each purchaser. Thus, even if token purchasers currently may be described as irrationally exuberant, meeting the *Howey* test is within the control of the token seller because the test is objective not subjective. It follows that there is a “right way” for token sellers to construct tokens and conduct token sales, initially as a security, but once the token has achieved full functionality, it should be treated as a non-security that will ultimately trade on spot markets regulated under the anti-fraud rules administered by the CFTC.

In addition to being analytically inconsistent with existing law, categorizing tokens immutably as securities will mean that tokens cannot be used for their intended purposes in the United States. Securities cannot be used in the way utility tokens are intended to be used (*e.g.*, as micro payments for micro tasks on a social network). From a policy perspective, it is important that we apply our securities laws in such a way that inapposite regulation does not cause today’s highly mobile workforce to develop these technologies abroad (as many already have) if utility tokens cannot be used for their intended purposes in the United States. While regulators must be mindful of containing the highly speculative and frothy market that currently exists, in which resale motives may predominate, use motives are gaining traction. As use of tokens grows, and as the novelty wears off, we expect that circumstances may well change again to the point where the irrational exuberance has subsided and there is a more balanced view of tokens as merely tools for interacting with various software platforms and applications.

⁴<http://dogecoin.com/>.

Policy objectives aside, and whether or not a less frothy future state comes to pass, this memorandum addresses the analytical basis for the appropriate treatment of token sales under existing law.

Detailed Analysis

A. Definition of Utility Token

In October 2008, the Bitcoin whitepaper⁵ introduced a new currency based on distributed ledger technology, also known as the Bitcoin Blockchain. Currency was the first use case for this underlying technology. Other use cases include using cryptographically secure distributed ledgers to track and trade traditional debt and equity securities, or any other tangible or intangible asset, good or service. This memorandum does not cover:

- (1) Digital Securities—meaning (i) any token that represents or otherwise enables a blockchain transfer of a share of stock, note or other type of security explicitly included in the definition of “security” in the Securities Act and (ii) any token that would constitute an (a) ownership interest, (b) equity interest, (c) a share of revenue, profit and/or loss, or assets and/or liabilities, (d) status as a creditor or lender, (e) claim in bankruptcy, (f) holders of repayment obligations, or (g) right to convert into an investment interest, all with respect to the token project or network application, or any legal entity;
- (2) Digital Currencies—meaning fungible tokens that have no other marketed functionality than use as a medium of exchange or stored value;⁶ or
- (3) Tokenized Goods and Services—meaning each token represents the right to a specific good or service that would often not be perfectly fungible with any other token.⁷

This memorandum covers utility tokens, defined as fungible tokens that have some software-based functionality beyond mere use as a medium of exchange or stored value, although typically the tokens also have those currency-like properties. The value of these utility tokens should be derived from their use in a smart contract or other application automating the payment and delivery of goods or services, including access to decentralized networks.

B. Token Sale History and Evolving Model

A large number of token sales of so-called “alt coins” occurred in 2014 and 2015. These were typically coins, based on the software code for Bitcoin, which is open-source software accessible to anyone. Many of these early tokens were digital currencies, although over time these tokens were used in more novel ways as part of a software network or application and became utility tokens (as defined for purposes

⁵Satoshi, Nakamoto, *Bitcoin; A Peer-to-Peer Electronic Cash System*, www.Bitcoin.org, available at <https://bitcoin.org/bitcoin.pdf>. (last visited March 22, 2018).

⁶Digital currencies, like Bitcoin, would generally not be securities unless there are somewhat unusual facts and circumstances causing the coin to fall within the definition of a security (e.g., if the coin’s promoter builds certain features into the coin like diminishing supply or promises significant actions that would make the coin more valuable in the future). Typically, digital currencies are complete and useful as currency immediately upon creation of the first coin and do not promise any further development of features or functionality or actions to make them more valuable in the future. Even if the coin is marketed as an investment (as physical gold coins often are, for example), it would not be a security unless the expectation of profits is based on the efforts of others.

⁷Non-fungible (or less fungible) tokenized goods and services do not pose the same trading issues and easy resale profit opportunities as fungible utility tokens. By definition, the consumptive intent of the purchaser is patently obvious with respect to this type of token. In this case, the token can be abstracted away and its status as a non-security simply follows the non-security status of the underlying good or service. If the presale of a Tesla, for example, had used distributed ledger technology to track the identity of holders of the presale rights to the Tesla, the token purchasers would have had such clear consumptive intent that the tokens should not have been deemed securities even if such rights had been traded on an exchange while the car was under development. In this case, the token could either represent a customized car (i.e., a nonfungible token), or it could represent a fungible currency value only redeemable for a car to be selected by the token holder in the future (akin to a gift card). Either way, the consumptive intent is clear. Tokenized concert tickets would be another example of this type of token, where there is a fixed supply of tickets and initial sales are likely to be virtually exclusively to and between resellers, but the tickets will ultimately be purchased, for the most part, by the end users who go to the concert. In the case of concert tickets, of course, it is also possible for the tokens to be perfectly fungible if the concert is all open seating, for example, so the touchstone for this type of token is the clarity of the consumptive intent of the ultimate end use purchasers. Of course, as with digital currencies, the offer and sale of this type of token could still meet the investment contract test if, for example, the tokens are coupled with a management contract like the one present in the *Howey* case.

of this memorandum). In 2014 and 2015, market participants believed that as long as these alt coins did not pay any sort of financial return, and did not represent a share of any company, similar to Bitcoin, they should not be treated as securities. Over time, the market cooled as appetite faded for new tokens that offered little in true functionality other than use as a currency, and use began to rise for the alt coins that included significant functionality in addition to use as a currency. In 2017, there was a resurgence of token sales based on the advent of more capable token technology. The ERC20 token protocol, as well as several others, now embed executable code into each token (often referred to as smart contracts), which allows developers to tokenize anything that software can create. These second-generation tokens can be said to be tokenized software products or APIs (application programming interfaces) that perform a function in addition to acting as a medium of exchange or stored value.

Initially, these new utility tokens were thought of by market participants as the sale of products in development that could follow the Kickstarter crowd sale model, so long as they continued to avoid paying any sort of financial return or share of ownership of a company or project. The offers and sales were made at a time when the market for tokens was untested and it could not be said that there was a built-in reasonable expectation of profits associated with resale because secondary markets were not assured.⁸ Participants in the offers and sales tended to be technologists, developers, software users, and innovators. A reasonable amount of technological know-how was required just to be able to participate in a token sale. Means of holding tokens became more user friendly, including in online wallets, and means of exchanging one token for another, including on token exchanges, were made more reliable and simplified.

Over time, as the development of robust secondary markets became more and more of a given, market participants began to evolve the model to take into account the changing market conditions. Specifically, it became apparent that the offer and sale of tokens potentially implicated the Federal and state securities laws and market participants started to apply the *Howey* test to determine whether the tokens might properly be viewed as securities. This in turn led to delivering increasingly functional tokens at the time of a public token sale to offset the increasingly apparent expectation of profits associated with secondary trading (as opposed to use of the token) that began to emerge.

Today, as discussed below, while there are many token sales that do not follow best practices, market participants seeking to follow best practices generally follow a model where, before the tokens are fully functional, the sale of the tokens is conducted under an exemption from the registration requirements of the Securities Act and the proceeds are used to build functionality into tokens that will later be distributed to the pre-functionality purchasers. Typically, this is effected through the use of a pre-functionality token sale agreement that is not transferable and must be held indefinitely. The tokens are not delivered to the pre-functionality purchasers (and, therefore, do not begin trading on any exchanges or in peer-to-peer wallets) until the system for using the tokens becomes fully functional. Once full functionality is achieved, the token seller delivers the tokens to the pre-functionality purchasers and often conducts a second sale of the fully functional utility tokens to the public as a non-security.

C. Overview of Securities Law Analysis

The Securities Act regulates the **offer and sale** of securities. Once it is established that an instrument is a security within the meaning of the Securities Act, this transactional regulatory regime requires that each offer and sale of a security be registered or exempt from the registration requirements of the Securities Act. For current purposes, the threshold question is whether the instrument or arrangement meets the Securities Act's wide-ranging definition of "security." As discussed in the Dao Report, the applicable test then is whether the instrument or arrangement by which the offers and sales of utility tokens are made would constitute an "investment contract" under *Howey*. This is a multi-factor test based on facts and circumstances that must be analyzed with respect to the instrument or arrangement as of the time of each offer and sale. Facts and circumstances can and do change over time, so the results may be different, even for the same token, depending on when the offer and sale is made.

⁸ Generally, when a new team markets a new product or service, it is extremely unlikely for any sort of secondary market to develop on its own. It normally requires promotional efforts over a long period of time to gain any sort of traction and most projects fail to ever get a secondary market to develop. It cannot be said that a reasonable purchaser was expecting to profit in secondary markets at this point in the history of token sales.

In most cases, under present market conditions,⁹ the pre-functionality sale of tokens may well be a securities transaction under the Securities Act based on the investment contract analysis under *Howey*.¹⁰ Once full functionality has been incorporated into the technology underlying the token, the token is a commodity trading on spot markets accessible to the public, which are subject to the anti-fraud rules enforced by the CFTC described below. For these purposes, “full functionality” is not intended to mean that merely some utility exists but rather that the requisite quantum of functionality exists such that the efforts of the promoter or others to deliver additional functionality do not form the basis for a reasonable purchaser’s expectation of profits in purchasing the token. The requisite quantum of functionality is further discussed below.

Of course, the circumstances could change again in the future, as the novelty wears off, and a pre-functionality crowd sale structure could work again, if and when it becomes clear that purchasers have switched back to purchasing primarily for consumptive purposes rather than resale (as is the case with Kickstarter campaigns). In addition, even under present market conditions, token sellers may decide to take certain steps to ensure use rather than resale, which would also change the analysis. In such a case, the *Howey* test would arguably not be met if **either** there is not sufficient expectation of profits because the token is generally being purchased for consumptive purposes **or** the expectation of profits is predominantly based on variables exogenous to the efforts of the promoter(s) of the token.

D. Description of the Pre-Functionality Token Sale Agreement

Although pre-functionality token sale agreements may be executed with differing characteristics, for purposes of this memorandum, we assume the pre-functionality token sale agreements will have the following common characteristics:

- The purchaser pays to the seller the purchase amount (which may be denominated in fiat currency, such as U.S. dollars, or digital currency, such as Bitcoin) on or about the date on which the pre-functionality token sale agreement is executed.
- In consideration of the purchase amount, the seller agrees to deliver to the purchaser a number of tokens equal to the purchase amount divided by a certain price on or about the time the seller conducts a public sale of the tokens or otherwise publicly launches the system or application on which the token may be used. In either case, the delivery does not occur until full functionality is achieved.
 - The pre-functionality price may be stated as a fixed value, in which case the quantity of tokens to be delivered can be determined at the time the pre-functionality token sale agreement is executed. This is always the case when the trigger for token delivery is network launch.
 - Alternatively, the pre-functionality price may be stated in terms of a percentage of the eventual public sale price.
- The pre-functionality token sale agreement is a separate instrument from the tokens and terminates upon the seller’s delivery of tokens to the purchaser.
- The pre-functionality token sale agreement generally contains certain other standard representations, including, for instance, representations from the purchaser that it is an accredited investor purchasing the rights to the token embodied in the agreement for its own account and not with a view to distribution.

A pre-functionality token sale agreement frequently will not define the specific function of the token or the timeframe for its development and completion, or require the seller to conduct a sale before a specified time or at all. The seller’s whitepaper and other information provided to the pre-functionality purchasers typically addresses such matters, often in very general terms. When analyzing a potential investment contract, the “[d]ecision will necessarily turn on the totality of the circumstances, not on any single one.” *SEC v. Aqua-Sonic Products Corp.*, 687 F.2d 577 (2nd Cir. 1982), *cert. denied, sub nom Hecht v. SEC*, 459 U.S. 1086 (1982).

⁹Present market conditions for utility tokens include the presence of robust secondary markets trading the rights to the tokens being developed primarily among resellers with speculative intent rather than users with consumptive intent. To continue the analogy to event ticket sales, the market for utility tokens is still in the early days after initial launch of ticket sales where resale is the primary intent of buyers who are attempting to gauge the ultimate price the end-user will be willing to pay for this fixed-supply good.

¹⁰The Kickstarter pre-functionality crowd sale model likely doesn’t apply under present market conditions for utility tokens. Kickstarter campaigns do not have secondary markets trading the rights to the goods being developed, which calls into question consumptive intent.

Thus, it would be the totality of the circumstances relating to the use of the proceeds from pre-functionality token sale agreements to develop and launch a token that may give rise to an investment contract under *Howey*, rather than the pre-functionality token sale agreement itself. Nevertheless, to facilitate the discussion, this memorandum will analyze a pre-functionality token sale agreement as though it incorporated all of the reasonable understandings and expectations of the purchaser that would arise under the total circumstances.

Because of the risk that a pre-functionality token sale agreement may be deemed to constitute an investment contract, as discussed below, pre-functionality token sale agreements are frequently sold in compliance with an exemption from the registration requirements of the Securities Act. This would include provisions prohibiting any transfer of the pre-functionality token sale agreement except in compliance with such exemption, or more typically, a standard prohibition on transfer or assignment of the agreement without consent.

E. Circumstances in Which a Pre-Functionality Token Sale Agreement May Create an Investment Contract

A pre-functionality token sale agreement to deliver a specified amount of an asset at a specified price on a future date has many of the characteristics of a forward contract for the underlying future tokens. It is established that a forward or futures contract for non-securities, in fact any type of sales contract, normally does not entail an investment contract. For example, in *SEC v. Commodity Options Intern., Inc.*, 553 F.2d 628, 632 (9th Cir. 1977), the Ninth Circuit stated that:

Commodity futures contracts are considered not to be securities *per se*. [Citation omitted] They are investments to be sure. The investment, however, is not in an enterprise but is in the underlying commodity, and we may assume, arguendo, that a conventional option to buy or sell a futures contract takes on the character of the contract that is the subject of the option and is no more a security than is that underlying contract.¹¹

A pre-functionality token sale agreement differs from conventional forward contracts in an important respect: it typically involves a to-be-created novel product or service with no established market or value. In the words of the Ninth Circuit, such agreements are often “investments in the enterprise” of creating an operating token rather than an investment in just the token.

Most other products and services have a market value determined by general supply and demand where prices are bounded by the price of competing goods or services. Even if the seller in a typical forward contract engages in significant promotional efforts, such efforts should be expected to have only a marginal impact on the product’s price and any resulting profits from the forward contract. Such promotional efforts would not be “undeniably significant [efforts], those essential managerial efforts which affect the failure or success of the enterprise.” *SEC v. Glenn W. Turner Enters., Inc.*, 474 F.2d 476, 482 (9th Cir. 1973); see e.g., *Bender v. Continental Towers Ltd. P’ship*, 632 F. Supp. 497, 501 (S.D.N.Y. 1986) (“Here, plaintiffs allege that Continental influenced the value of the condominium units through its marketing efforts and its own buying and selling strategies. But these efforts by Continental would have at most only a marginal effect on the value of the condominium units”). Thus, expected profits from any appreciation in the value of the asset underlying a typical forward contract should not be derived from the efforts of the seller.

In contrast, the future tokens underlying a pre-functionality token sale agreement have yet to be fully developed or to demonstrate their functionality and typically are associated with an entirely novel application where the ultimate ranges of prices to be paid by end users is speculative. Any eventual profits from the pre-functionality token sale agreement may therefore depend on the successful development of the application using the tokens and on the seller’s success in launching the application. In some circumstances, this may elevate the seller’s efforts to the “undeniably significant” level required under *Glenn W. Turner*.

¹¹The court distinguished standard commodity futures and options from the “naked double options” that were offered by the defendant. Defendant collected and pooled the premiums for these options “and put out to speculation with the expectation that the seller’s expertise in speculation will produce a profit in which the buyer and seller will share,” thus creating an investment contract. *Commodity Options Intern.*, 553 F.2d at 633. See also, cases cited at § 15[a] of Stephen G. Christianson, *What is “Investment Contract” within Meaning of § 2(1) of Securities Act of 1933 (15 U.S.C.A. § 77b(1)) and § 3(a)(10) of Securities Exchange Act of 1934 (15 U.S.C.A. § 78c(a)(10)), Both Defining Term “Security” as Including Investment Contract*, 134 A.L.R. Fed. 289 (1996).

Real estate provides an example of circumstances in which an asset not generally regarded as a security may become the basis of an investment contract based on promises of future development. Although the SEC has stated that “[t]he offer of real estate as such, without any collateral arrangements with the seller or others, does not involve the offer of a security,” *Guidelines as to the Applicability of the Federal Securities Laws to Offers and Sales of Condominiums or Units in a Real Estate Development*, Securities Act Release No. 5382, 38 FR 9587 (1973), courts have found allegations “that defendants encouraged investment purchases by promising the lots would increase in value because of defendants’ activities in developing and providing amenities, and that defendants led purchasers to believe a trust would be established to construct and operate facilities for their common benefit,” sufficient to establish an investment contract. *Aldrich v. McCulloch Properties, Inc.*, 627 F.2d 1036, 1039 (10th Cir. 1980); *see also, Fogel v. Sellamerica, Ltd.*, 445 F. Supp. 1269, 1277–78 (S.D.N.Y.1978) (“the developers did represent that a variety of residential services and recreational facilities would be developed so as to increase the value of plaintiffs’ property along with all of the lots in the development”); *Anderson v. Grand Bahama Dev. Co.*, 384 N.E.2d 981, 985 (Ill. App. Ct. 1978) (“[P]laintiffs allege that the land will become ‘valuable and salable to tourists’ and others *solely* [original emphasis] by virtue of defendants’ efforts. They also allege that purchasers of the land could not, nor were they expected to, do anything to increase the value of their investments. These allegations fulfill the final two requirements for an investment contract as stated in *Howey*.”). Similarly, an undertaking to develop and launch an application for a token may create a collateral arrangement that would cause an agreement to buy a utility token to qualify as an investment contract, even though the token itself will be a commodity.

As more fully discussed in Section I.1 below, the manner in which a token is offered is also relevant to its status as an investment contract. Offering materials that emphasize the potential profits from purchasing a token may create an expectation of profit that satisfies the third prong of the *Howey* test. Because the purchasers of the pre-functionality token sale agreement will not receive tokens until completion of the project, and many purchasers may not intend to use the tokens, there is pressure on the seller to discuss the potential market value of the tokens in its offering materials. The materials also commonly explain the anticipated timeframe for development, the development team and their relevant experience. Under these circumstances, the offering materials could be viewed as “emphasizing the economic benefits to the purchaser to be derived from the managerial efforts of” the seller which, according to the *Munchee Order*, could factor into finding that the pre-functionality token sale agreements are investment contracts.

The purchasers of the pre-sale functionality token sale agreement may also require assurances that the seller intends to conduct a public sale of the future tokens at a higher offering price than the pre-functionality price, reflecting the fact that the early money is being paid to take the risk that functionality may not be achieved or that the expected use may command a lower price than anticipated. Although the purchasers do not generally offer their tokens in the public sale, and may not receive unrestricted access to the tokens until the sale is completed, their ability to profit from the sale of their tokens generally depends on the success of the public sale. In the case of a token used for a new or unique software application, the public sale will establish the initial value of the token, so the seller’s efforts may have more than a marginal effect on the potential profits of the purchasers who decide to sell their tokens.

Under such circumstances, which are different from those of a typical forward contract, the SEC or a court may find that the efforts of a seller are “undeniably significant” with respect to the expected profits of the purchasers. The development of a successful application for a token may be comparable to the efforts required to develop the infrastructure and amenities of a resort, which courts have found to satisfy the final element of an investment contract. Moreover, unlike an asset (such as a commodity or condominium) with an established market, the developer of a new or unique application may have significant influence over the related token’s initial market value. Consequently, the seller’s efforts in conducting the public token sale and launching the network application may have a significant impact on the purchaser’s expected profits from selling, rather than using, the tokens. Circumstances such as these create a heightened risk that the pre-functionality token sale agreements may be classified as investment contracts.

Different circumstances may reduce the risk of a pre-functionality token sale agreement being considered an investment contract. For example, a seller may be converting an already developed application into a blockchain format using the future tokens. This might be the case for a video game which already has an “in-game” token that can be earned by playing the game and spent to acquire virtual

assets used in the game. The game developer may want to convert the in-game token to a blockchain token so as to allow players to purchase tokens rather than earn them (saving hours of game playing), and to permit other games to incorporate the tokens, so players can move their virtual wealth from game to game. In this instance, the token's "ecosystem" is largely developed; the developer only needs to pay for the programming and other costs of moving the in-game token to a blockchain. To fund this cost, the developer may offer pre-functionality token sale agreements for the blockchain tokens to current players of its game who would benefit from the ability to acquire and transfer the tokens outside of the game. The materials marketing these pre-functionality token sale agreements could emphasize the established functionality of the future tokens, the value of which would depend on the appeal of the gaming community created by the players (including the purchasers), rather than the entrepreneurial or managerial efforts of the seller. These purchasers would resemble someone buying a condominium in a nearly completed resort, which "is not under normal circumstances treated as purchasing a 'security.'" *Rodriguez v. Banco Cent. Corp.*, 990 F.2d 7, 10 (1st Cir. 1993); see also, cases cited in *Christianson*, *supra* note 2, 134 A.L.R. Fed. at § 12[c]. Under circumstances such as these, a pre-functionality token sale agreement may resemble a standard forward contract more closely than an investment contract.

F. Why Tokens Delivered Pursuant to an Investment Contract May Not Qualify as Investment Contracts

The foregoing analysis shows how a pre-functionality token sale agreement might be regarded as an investment contract due to circumstances unrelated to whether the future tokens are securities. If the circumstances have changed materially by the time of the delivery of tokens to the pre-functionality purchasers (which is often accompanied by a public sale of the utility tokens), any new offer or sale of those same tokens should not necessarily be construed to represent investment contracts. This would be the case if development of the token's functionality is completed by the time of the public sale. So long as there are no other efforts of others involved either—*i.e.*, (i) marketing materials are focused primarily on present functionality and use of the token, (ii) the seller has not built features into the token intended to provide an investment return or support the price of the token in secondary markets, and (iii) the seller does not promise to take steps to support secondary trading of the token—then, at this stage, the seller's efforts would be limited to supporting the use of the tokens with the network or software application and any further increase in the value of the token should not be derived from the efforts of the seller. Once the tokens are delivered to the purchasers, each purchaser would have unfettered control over the tokens, and would have no reasonable expectation that the seller will take future steps intended to increase the market value of the tokens. Generally, "[T]he courts will find a security is not present where the investor retains unfettered discretion over the distribution and marketing of the product." *Wabash Valley Power Ass'n., Inc. v. Public Service Co. of Ind., Inc.*, 678 F. Supp. 757, 767 (1988) (added emphasis). At this point, unlike the DAO Token, which promised returns from projects undertaken by the DAO, any reasonable expectation of profits the purchaser might have should depend primarily on the market's demand for the functioning application and the purchaser's own efforts to find buyers and negotiate a favorable price for the tokens (akin to general expectations of appreciation in the demand for a commodity or real estate).

Such changing circumstances—the completion of the full functionality of the token—also allow the seller to take a different approach to marketing its network or software application at the time of the public token sale. The completion of the network or software application allows the seller to focus on selling the tokens to potential users, so any marketing materials would emphasize the value in using the goods and services accessible through the token. In addition, unlike pre-functionality purchasers, the purchasers in a public sale do not expect the seller to hold a future sale of the tokens at a higher price. In fact, if the public sale is conducted to distribute the tokens at approximately their market clearing price, purchasers should not have a reasonable basis to anticipate any future appreciation in their value.

These circumstances: (i) completion of the network or software application in which the token is used, (ii) a corresponding emphasis on selling the token based on its use and the value of its application and (iii) a public sale price that approximates such value, all serve to separate the public sale of the tokens from the circumstances existing at the time the pre-functionality token sale agreements are privately placed. These changed circumstances should prevail at the time the pre-functionality purchasers receive delivery of their tokens and have an opportunity to sell them. If the tokens are not digital securities by design, and if all the other facts

and circumstances support the conclusion that the token sale agreements entered into at the time of the public sale should no longer be viewed as investment contracts, then tokens received and, if applicable, sold by pre-functionality purchasers under those same circumstances should not be viewed as investment contracts either. The characteristics of the pre-functionality token sale agreement by which the tokens were originally purchased should not be determinative of the status of the tokens as “investment contracts” with respect to the subsequent offer and sale transaction occurring under changed facts and circumstances.

Instead, we would argue that the pre-functionality token sale agreement was the instrument that was deemed a security under the *Howey* test, but that it is distinguishable from the underlying token. The pre-functionality token sale agreement is subject to the applicable private placement restrictions for the duration of its existence and may not be offered or sold except pursuant to appropriate registration or exemption. At the point of full functionality, however, and delivery of the tokens, the tokens take on a separate regulatory existence and their status as securities should be independently determined at that time.

From *Howey* (oranges) to *Edwards* (pay phones),¹² the case law is replete with products that provide the basis for an investment contract without qualifying as securities themselves. See, *Christianson*, *supra* note 2, 134 A.L.R. Fed. at §§ 10[b] (citing cases involving dental care products, foxes, beavers and master tapes) and 14[a] (citing cases involving whisky, personal and home care products, oil, chinchillas and earthworms). In these cases, a critical element was the promoter’s promise to either purchase or arrange for the sale of the underlying product at a profit, regardless of its current market value. A seller’s undertaking to conduct a public sale of future tokens at a price above the pre-functionality price might be considered analogous to the promoters’ promises in these cases. In that context, the promise of an opportunity to sell the tokens at a profit after delivery makes the pre-functionality token sale agreement an investment contract, not the character of the tokens (or any of the products in the cited cases).

Critical, and unique to tokens and this analysis, is the mutability of the token—it can be both initially representative of an investment opportunity and subsequently a functional tool for use on the blockchain application. Thus, one of the reasons it may seem appropriate to treat both pre-functionality token sale agreements and their underlying tokens as investment contracts may stem from the fact that a token directly issued and marketed under the same circumstances as a pre-functionality token sale agreement may be considered an investment contract for the same reasons as a pre-functionality token sale agreement. A pre-functionality token in this sense, has the same security-like characteristics as a pre-functionality token sale agreement. This was the case in the Munchee Order, where the utility tokens were created and delivered to purchasers prior to full functionality. The Munchee Order involved several practices (such as an undeveloped application) commonly associated with pre-functionality token offerings.

So long as utility tokens are not created or delivered to the pre-functionality purchasers prior to full functionality, the financial instrument that is the proper subject of the analysis is the pre-functionality token sale agreement itself, not the future token, which does not yet exist.

G. Deemed Underwriter Status and “Coming to Rest” Analysis

The adage “once a security, always a security” is alive and well, in light of the fact that the “security” is the investment contract (or, more precisely, the right to future tokens evidenced by that contract) not the asset underlying the investment contract. The pre-functionality token sale agreement never loses its character as a security and in practice these contracts are non-transferable on the part of the purchaser. Thus, the right to future tokens represented by the pre-functionality token sale agreement, which is a security, stays a security, and comes to rest in the hands of that initial purchaser. The best way to think about this is to change one fact from the *Howey* case itself—suppose the purchasers were paid in oranges instead of cash. If all the other facts remained the same, we would undoubtedly still consider the contract to be an investment contract (it would still be a contract to share profits, just denominated in oranges), but we would never conclude that the oranges, once fully grown and delivered, had somehow transformed into a security that could not be immediately sold by the purchasers upon receipt.

H. Jurisdiction Over Hybrid Instrument

When a contract involves an asset that is a commodity being sold under circumstances that cause the transaction to be a securities transaction under the Secu-

¹²*SEC v. W.J. Howey Co.*, 328 U.S. 293 (1946); *SEC v. Edwards*, 540 U.S. 389 (2004).

urities Act, Section 2(f) of the Commodity Exchange Act (the “**Hybrid Instrument Exclusion**”) guides the analysis of jurisdictional boundaries.¹³ By acknowledging and relying on the distinctions outlined within that provision, the SEC retains its inherent discretion and latitude to address potential security law violations at the point of token issuance, in addition to, and potentially independent of, pre-functionality token sale violations. This has the systemic benefit of maintaining clarity for responsible actors within the industry, ensuring utility tokens are treated in accordance with their inherent fungible characteristic, not negatively impacting the wider pre-funding model for the rest of the industry, and maintaining consistency with existing law designed to address these dilemmas. A pre-functionality token sale would need to satisfy the enumerated requirements of the Hybrid Instrument Exclusion in order to meet the definition, although such requirements could be met through appropriate documentation and marketing restrictions, for example a legend that confirms the pre-functionality token sale agreement is subject to SEC oversight and not an instrument subject to the provisions of the Commodity Exchange Act.

Section 1(a)(29) of the Commodity Exchange Act defines a “hybrid instrument” as “a security having one or more payments indexed to the value, level, or rate of, or providing for the delivery of, one or more commodities.” Section 1(a)(31) of the Commodity Exchange Act defines a “security” by reference to Section 2(a)(1) of the Securities Act of 1933 and Section 3(a)(10) of the Securities Exchange Act of 1934, both of which in turn define a security to mean, in pertinent part, an investment contract.

The guidance provided by the Hybrid Instrument Exclusion is agnostic as to what is ultimately delivered pursuant to the pre-functionality token sale agreement in question:

- in the event that the ultimate utility token delivered *does not* bear the hallmarks of a security and thus can be properly categorized as a commodity the SEC retains jurisdiction and regulatory oversight of the pre-functionality token sale agreement *qua* an investment contract, with the CFTC taking over jurisdiction and enforcement oversight of the delivered utility token in the spot market, as outlined in Section I.1 below.
- in the event that the ultimate utility token delivered *does* bear the hallmarks of a security and thus can be properly categorized as a security the SEC retains jurisdiction and regulatory oversight of the pre-functionality token sale agreement *qua* an investment contract, and also retains jurisdiction and enforcement oversight of the delivered utility token as a security *qua* a commodity. This result, although slightly counter-intuitive, arises because under the definitions applicable to the Commodity Exchange Act, a security is a type of commodity, albeit an excluded commodity which is subject to exclusive SEC oversight.

The history and interaction between the SEC and the CFTC on shared instruments is consistent with this result, and the Hybrid Instrument Exclusion is a direct result of consideration of products that escaped clear classification. The SEC

¹³Section 2(f) Exclusion for qualifying hybrid instruments of the Commodity Exchange Act provides:

(1) In general

Nothing in this chapter (other than section 16(e)(2)(B) of this title) governs or is applicable to a hybrid instrument that is predominantly a security.

(2) Predominance

A hybrid instrument shall be considered to be predominantly a security if—

(A) the issuer of the hybrid instrument receives payment in full of the purchase price of the hybrid instrument, substantially contemporaneously with delivery of the hybrid instrument;

(B) the purchaser or holder of the hybrid instrument is not required to make any payment to the issuer in addition to the purchase price paid under subparagraph (A), whether as margin, settlement payment, or otherwise, during the life of the hybrid instrument or at maturity;

(C) the issuer of the hybrid instrument is not subject by the terms of the instrument to mark-to-market margining requirements; and

(D) the hybrid instrument is not marketed as a contract of sale of a commodity for future delivery (or option on such a contract) subject to this chapter.

(3) Mark-to-market margining requirements

For the purposes of paragraph (2)(c), mark-to-market margining requirements do not include the obligation of an issuer of a secured debt instrument to increase the amount of collateral held in pledge for the benefit of the purchaser of the secured debt instrument to secure the repayment obligations of the issuer under the secured debt instrument.

and the CFTC have considered questions relating to hybrid instruments since the 1980s (of particular note is the report of the President’s Working Group on Financial Markets in 1999).¹⁴ Since that time, the Hybrid Instrument Exclusion (formerly the hybrid instrument exemption) has been an appropriate method of determining which agency should have appropriate oversight over a legally awkward instrument.

Given the unique and novel nature of utility tokens, conceiving a pre-functionality token sale agreement as a hybrid instrument is a pragmatic and common-sense approach to a scenario that can exhibit the characteristics of both a security and a commodity for all the reasons discussed above in Section E. This position is also consistent with the legislative history and general position of both the SEC and CFTC that products should generally be regulated by a single agency. It also results in the maintenance of the inherent fungibility of the utility tokens in question—an outcome that from a commodity law perspective is sensible (the characteristics of a commodity should not be affected by its means of delivery), as well as from a securities law perspective (the utility token can be assessed on its own merits as a potentially distinct security).

On balance, treating the underlying token as a ‘commodity’ is an outcome consistent with the fundamental legislative intent of the Hybrid Instrument Exclusion (bearing in mind that for these purposes, a security can also be a type of commodity) and is also consistent with statements of CFTC Commissioner Brian Quintenz that [digital currencies] “may actually transform at some point from something that starts off as a security and transforms into a commodity” and that “they may start their life as a security from a capital-raising perspective but then at some point—maybe possibly quickly or even immediately—turn into a commodity”.¹⁵

I. Quantum of Functionality

The real question we need to address is not about transformation, it is whether a utility token can ever achieve the status of a commodity that is not also a security. This goes to the issue of the quantum of functionality required and whether and when variables exogenous to the promoter become predominant as the reason for the purchaser’s expectation of profits.

Since utility tokens do not represent a share of the promoter, the main ties back to the promoter once full functionality has been achieved would seem to be any residual belief that the promoter is likely to continue to support and update the software underlying the tokens and/or the network on which the tokens can be used. Of course, all software products have updates and upgrades, so it would be surprising indeed if tokenized software must always be treated like a security while non-tokenized software is not. Tokenized software is a novelty but the analytical framework underlying the case law requires a determination of what predominates as the underlying driver of price changes that a reasonable purchaser would expect. In a post-functionality trading market for a fully completed piece of tokenized software, the ongoing updates and upgrades from the promoter would only represent a very small driver of price changes, if any. The state of the industry, competing novel trends, competing goods and services, and fundamental supply and demand issues that drive the price of the access or service provided by the token should predominate the value attributed to a token. The recent volatility in the digital currency markets demonstrates this very clearly. It cannot be said that someone’s promises of updates to the Bitcoin protocol, for example, had anything to do with the recent price swings. The real price swings occurred **after** the fork to the protocol was completed. These market moves were unrelated to any promises by a promoter to update the software as a driver of price, but instead reflected exogenous views of the market as to the value of Bitcoin.

1. Whose Perspective Counts?

In *Teague v. Bakker*, the Fourth Circuit affirmed that “[t]he subjective intention of a given purchaser cannot control whether something is a ‘security’” for purposes of the *Howey* test, otherwise “some might have purchased securities while others did not.” 139 F.3d 892, 892 (4th Cir. 1998). Rather, “[t]he proper focuses of the inquiry are on the transaction itself and the manner in which it is offered.” which would tend to place emphasis on objective evidence and considerations such as marketing materials, communications and transaction documents. *Id.*

¹⁴Report of the President’s Working Group on Financial Markets, *Over-the-Counter Derivatives Markets and the Commodity Exchange Act*, November 9, 1999. Available at: <https://www.treasury.gov/resource-center/fin-mkts/Documents/otcact.pdf>.

¹⁵COINCENTER.ORG, *CFTC commissioner: tokens that start as securities may “transform” into commodities*. October 20, 2017. Available at: <https://coincenter.org/link/cftc-commissioner-tokens-that-start-as-securities-may-transform-into-commodities>.

The manner of offering was paramount in the recent Administrative Order against Munchee, Inc., Sec. Act Release No. 10445 (Dec. 11, 2017) (the “**Munchee Order**”), which found an investment contract based on the promoter “emphasiz[ing] the economic benefits to the purchaser [of a token] to be derived from the managerial efforts of the [token’s] promoter.” The tokens in the Munchee Order (“MUN”) were intended for use in an application to advertise, review and buy meals from restaurants, although “no one was able to buy any good or service with MUN” at the time of their sale. Munchee Order at 10. “In the MUN White Paper, on the Munchee Website and elsewhere, Munchee and its agents . . . emphasized that the company would run its business in ways that would cause MUN tokens to rise in value.” *Id.* at 12. The SEC also found that “Munchee primed purchasers’ reasonable expectations of profit through statements on blogs, podcasts, and Facebook that talked about profits.” *Id.* at 14. Munchee also undertook to list MUN on exchanges, so that purchasers could realize profits through secondary trading, regardless of whether they ever used MUN in the application. *Id.* at 13. These findings led the SEC to conclude that MUN tokens were investment contracts, *id.* at 30, insofar as, “[b]ecause of the conduct and marketing materials of Munchee and its agents, investors would have had a reasonable belief that Munchee and its agents could be relied on to provide the significant entrepreneurial and managerial efforts required to make MUN tokens a success.” *Id.* at 34 (added emphasis).

Notwithstanding its emphasis on the manner of offering, *Teague* allowed that in some cases, “where most intended purchasers share a common understanding of, and have similar motives stoked by, an offering, the ‘subjective’ understanding and motives are powerful evidence of the objective intent and effect of the offering.” *Teague*, 139 F.3d at 892. *Teague* set a high bar for reaching this conclusion: it looked to “the subjective feeling of the vast majority of purchasers,” and not merely the particular plaintiffs in question, as likely indicative of the seller’s objective intention despite other evidence. *Id.* It should also be noted that the motives must still be “stoked by the offering,” rather than a general enthusiasm for all things associated with a blockchain. It follows that a token seller that implements safeguards and constructs a token and conducts a token sale the “right way” will ultimately be able to sell a utility token as a non-security even if some purchasers have wildly unrealistic expectations of profit akin to beanie baby mania.

2. Who are the “Others” in Efforts of Others?

The original formulation of the *Howey* test stated that the profits must have been expected “solely from the efforts of the promoter or a **third party**.” This test has been subsequently modified with respect to the requisite amount of efforts as discussed below. Some courts¹⁶ have focused on the efforts of **the promoter** as satisfying the common enterprise prong of the *Howey* test as discussed below, with other courts noting that this treatment would conflate the common enterprise prong with the efforts of others prong. Putting aside the common enterprise conflation and focusing again on the efforts of others prong, most cases focus on either the promoter’s efforts or the purchaser’s efforts. It would appear from the original formulation that reliance must be placed on the efforts of some identifiable person or persons. The clause would be overbroad if “others” were interpreted to include anyone other than the purchaser. All investment assets would be securities if efforts of others included the efforts of unspecified persons contributing to market dynamics and supply and demand. This element of the test will be relevant to many utility token sales since, unlike traditional enterprises, typically, the projects involve the development of open-source software that can be maintained by anyone and not just the original promoter of the project. Even for those who subscribe to the broad vertical commonality interpretation of the common enterprise prong of the *Howey* test, however, that interpretation has focused on the efforts of the promoter, so the entire community of open source software developers would need to be considered part of the promoter in order to satisfy that interpretation. While the original promoter is the most likely party to provide updates and upgrades to the code, the fact that there is a large community of developers who could easily decide to step in and do so further minimizes the amount of reliance a reasonable purchaser would objectively have on the efforts of the promoter as compared to the far weightier price drivers in a trading market that have nothing to do with the original token seller.

¹⁶ *Revak v. SEC Realty Corp.*, 18 F.3d 81, 87–88 (2d Cir. 1994), relying on *Long v. Shultz Cattle Co. Inc.*, 881 F.2d 129, 140–41 (5th Cir. 1989); *SEC v. Comcoa, Ltd.*, 855 F. Supp. 1258 (S.D. Fla. 1994) (finding vertical commonality with regard to service to assist application and development of FCC licenses). These courts can be said to subscribe to the broad vertical commonality interpretation of the common enterprise prong of the *Howey* test.

3. Requisite Amount of Efforts of Others

As discussed, the original *Howey* formulation was modified by subsequent case law that recognized the word “solely” was too narrow. It is clear that at one end of the spectrum, if either the purchaser’s efforts are significant in the success of the enterprise,¹⁷ or the promoter’s efforts are *de minimis* in assuring the success of the investment, the *Howey* test is not satisfied. Beyond that, courts have stated the requirement as “primarily” or “substantially” from the efforts of others.¹⁸ As discussed above, in *Glenn W. Turner*, the court stated the test as “whether the efforts made by those other than the investor are the undeniably significant ones, those essential managerial efforts which affect the failure or success of the enterprise.” The context for this test was a business enterprise that included both efforts of the promoter and efforts of the purchaser. The court was clearly focused on ensuring that promoters could not avoid the securities laws by merely building in some perfunctory efforts of the purchaser into their business schemes. When the context is about determining when the promoter’s efforts are displaced by variables entirely exogenous to (and beyond the control of) both the promoter and purchaser, the test is better understood to be a simple predominance test. For that reason, we have used predominance as the test throughout this memorandum, but we would also expect that if a court applied a test more like the *Glenn W. Turner* test, the efforts associated with software updates and upgrades would still not rise to the level described by that test. It can hardly be said that providing ongoing software updates and upgrades constitute those essential managerial efforts which affect the failure or success of the secondary market price,¹⁹ particularly compared to the other market dynamics affecting price in the trading market post-functionality.

Since the test is objective, and because use of tokens for their intended purpose is gaining traction, some courts might well conclude that purchasers are not merely passive and that the purchaser’s collective efforts are significant because use of the token for its intended purpose is a strong driver of demand for the token and, therefore, the price of the token. Many applications permit, and some require, token holders to participate in the operation of the application. A crowdsourcing application will not work unless enough users vote or otherwise record a view on the crowdsourced question. These applications frequently use tokens to regulate the crowdsourcing process, assign and weight votes and reward the most accurate predictions. Networked services are another common example of applications that require active participation by token holders. Network participants must download the service application on their computers and accept tokens in exchange for performing the service. Holders of tokens for such applications may be active contributors to the token’s success, rather than passive investors. Many courts have found that an arrangement does not constitute an investment contract when it involves significant efforts of the purchaser. See *Cordas v. Specialty Restaurants, Inc.*, 470 F. Supp. 780, 788 (D. Ore. 1979) (“[i]t is undeniable here that the plaintiff’s managerial efforts were intended to have an important effect on her own success. Her efforts would also have some effect, however slight, [added emphasis] on the success of the enterprise as a whole. [Citation omitted.] These factors are sufficient to preclude her from coverage under the *Howey* analysis.” “To hold otherwise would put the courts in the position of judging where along the continuum a manager’s efforts become ‘significant’ in the success of a larger enterprise.”) *Id.* at 788. The *Cordas* court chose to apply *Howey* based on the quality of the plaintiff’s participation, rather than its impact on the broader enterprise. Other courts have also taken this approach to the final prong of the *Howey* test, particularly in cases involving franchises. For example, *Boldy v. McConnell’s Fine Ice Creams, Inc.*, 904 F.2d 710 (9th Cir. 1990) (“In focusing on ‘the extent of participation the franchisee has under the franchise agreement’ in this case, it is clear that ‘each franchisee’s active management was essential to the success of his retail restaurant.’” [Citation omitted.]); see also, cases discussed in What is an “Investment Contract” within Meaning of §2(1) of Securities Act of 1933 (15 U.S.C.A. § 77b(1)) and §3(a)(10) of Securities Exchange Act of 1934 (15 U.S.C.A. § 78c(a)(10)), Both Defining Term “Security” as Including Investment Contract, 134 A.L.R. Fed. 289, § 17[a]–[c] (Cum Supp. 2017).

¹⁷ *E.g.*, *Steinhardt Group v. Citicorp*, 126 F.3d 144 (3d Cir. 1997) (limited partnership interest in a securitization transaction was not a security where limited partner’s retention of “pervasive control” meant that he was relying extensively on his own efforts).

¹⁸ See, e.g., *United States v. Leonard*, 529 F.3d 83 (2d Cir. 2008) (the court considered whether, under all the circumstances, the scheme was being promoted **primarily** as an investment).

¹⁹ This illustrates the problem with applying *Glenn W. Turner* to tokens. There is no enterprise on whose success or failure the token holder’s investment depends. The closest analog might be to substitute the secondary market for the “enterprise” in that test.

Whether or not a court finds substantial efforts of token holders are involved, it seems likely that once full functionality has been achieved, the efforts of the promoter would not rise to the level required by the efforts of others element of the *Howey* test to consider post-functionality sales of the token to constitute investment contracts.

4. *Gary Plastic*

The *Gary Plastic* case has special relevance to utility tokens given the robust secondary markets that have developed. In an ordinary case, most of the elements of *Gary Plastic* can be distinguished—token exchanges do not negotiate the terms of the tokens, do not promise to find buyers for the tokens and are not exclusive venues for purchase and sale of the tokens. The key element, however, that would be applicable is any promise by the promoter to establish or maintain a trading market for the tokens. This can be described as a special type of “efforts of others” that obviates the need for analysis of trading dynamics as the driver of price since the expectation that the market will exist in the first place is based on the promised efforts of the promoter. It follows that any promises by the promoter to support an active trading market for the token would, by itself, be sufficient to satisfy the efforts of others prong of the *Howey* test. The same would not be true, however, if the token seller were to cooperate with token exchanges in the qualification process without publicizing in advance any promise of such cooperation. Without a promise of supporting trading in advance of a purchase, the purchaser cannot reasonably expect it, as token exchange qualification requirements are significant and evolving rapidly. While outside the scope of this paper, we note that some exchanges are currently requiring token sellers to provide a securities law analysis and some token creators are declining to provide this for fear of being seen as facilitating exchange activity. As a result, many tokens perversely wind up being traded only on the less rigorous (often foreign) exchanges that do not require interaction. Discouraging cooperation with the qualification process, may negatively impact the ability of exchanges to properly discriminate between tokens that are securities, which the exchange is not licensed to list, and utility tokens. Similarly, merely providing links to token exchanges contained on a token seller’s website should not be viewed as efforts of the promoter to support an active trading market, so long as these links are merely included to assist users of the platform in obtaining tokens for use on the platform.

5. Full Functionality

In light of the above, it is clear that merely some utility is not sufficient under present market conditions. A reasonable approach to defining how much functionality is sufficient under present market conditions would be to say that the token must have at least as much functionality as any other non-tokenized good or service being sold. To that end, we would propose an 80/20 rule of thumb whereby the marketing materials focus on the present functionality of the token with much less attention paid to the potential future upgrades or additional features (*i.e.*, 80% focused on present functionality and 20% on future functionality). This roughly approximates what other sellers of non-tokenized goods and services have historically put into their marketing materials. While virtually all products with embedded software come with free updates, the seller will focus on the present functionality of the product to entice the purchaser with the features the purchase can presently enjoy. The seller might also mention planned future enhancements that will be delivered for free to induce the purchaser to buy now rather than wait because the purchaser will get the update for free when available without having to wait to enjoy all the present features of the product. Stereo equipment is a good example of this where the marketing materials will focus on the present features, but will also include some mention of the “future proof” nature of the purchase by discussing other codecs (*i.e.*, digital music formats) that will be supported on the equipment after a firmware update that will be provided for free when available.

Once a token has achieved its full functionality under this proposed standard, any purchaser that purchases the token with an expectation of profits is relying primarily on market dynamics affecting the value of the goods and services accessible through the token (not the promoter) for price changes. So long as the token seller did not promise to support secondary trading on any exchanges, the sale of a utility token with full functionality should not be the sale of a security.

J. *Consumptive Intent vs. Resale*

As discussed, the *Teague* court focused on objective criteria in determining the purchasers’ intent. Other Federal courts have expanded on *Teague*, concluding that marketing materials indicating an actual subjective investment-related purpose established by the plaintiff could not override a contractual representation and merger

clause affirming that a purchase was for consumption.²⁰ As such, even under current market conditions where resale intent appears to be more prevalent than consumptive intent, there are certain practices that could be employed by token sellers to establish sufficient consumptive intent, although these are not common features of a token sale. Here are a few examples:

- Establish limits on the number of tokens any individual purchaser may purchase to approximate the number likely to be used in a reasonable amount of time;
- Exclude purchasers who fit the profile of an investor (*e.g.*, venture funds or hedge funds);
- Include lockups on the tokens that preclude resale but permit use for some period of time;
- Include representations as to intended use of the token; and
- Include covenants of the purchaser to login and use the tokens in the network on some prescribed periodic basis.

Since an offering must meet each prong of the *Howey* test to be considered an investment contract, if sufficient consumptive intent were to be established, the token sale would not be an investment contract even if the sale occurred prior to the development of full functionality.

It is also important to consider when the appropriate time to measure consumptive intent *vs.* resale intent is. In the case of event tickets, resale intent predominates the first few days following ticket launch as resellers attempt to speculate on the ultimate price that users will be willing to pay. This is because the tickets are generally not released until shortly before the event takes place. Because there is a fixed date for use, the seller is able to ensure that the time for resale is arbitrarily short. With utility tokens, there is no fixed date for use so it is possible that resale will go on for a relatively long time and only gradually shift to use as the project gains adoption and traction among users. As that happens, the price would be expected to converge on the ultimate price that end users are willing to pay.²¹ If we measure consumptive intent today for a utility token launched last week, it is likely we will conclude that resale intent predominates over consumptive intent presently. That doesn't mean there never will be consumptive intent or that the utility tokens have no inherent consumptive purpose. The same would be true of event tickets if measured at a time when resale was prevalent. Anecdotal evidence suggests that there have been a number of earlier token offerings from the 2014 and 2015 vintage with respect to tokens that are now routinely used for their intended purpose. This is why the Kickstarter model was considered best practices for the early utility token sales in 2017. This inevitable change in circumstances, *i.e.*, mutability, at least for those tokens with truly useful functionality, is also why it makes sense under existing case law to only consider pre-functionality token sale agreements to be securities, and not the tokens themselves in perpetuity.

K. Characteristics of a "Compliant" Token Sale

As the DAO Report found, and as many commentators and regulators have observed, many token sales are currently running afoul of U.S. securities laws. In this sense, the DAO Report sounded an important cautionary alarm to the market. However, the offer and sale of tokens can be affected in a manner that complies with the requirements of the Federal and state securities laws. Here are the key characteristics that must be present in a token sale that complies with the requirements of the U.S. securities laws:

- The token cannot offer or be packaged with a financial return or share of ownership;
- Prior to achieving full functionality, the offer and sale of tokens will almost always be deemed to be the offer and sale of an investment contract that must be registered or exempt under U.S. securities laws;

²⁰*Demarco v. LaPay*, No. 2:09-CV-190 TS, 2009 WL 3855704, *8-*9 (D. Utah Nov. 17, 2009) (holding that plaintiffs could not "disclaim the contents of the contract which were clearly laid out and duly acknowledged by them" in real estate transaction); *see also Alunni v. Dev. Res. Group, LLC*, No. 6:08-cv-1349-Orl-31DAB, 2009 WL 2579319, *8 n. 12 (M.D. Fla. Aug. 18, 2009) (same).

²¹In many cases, the use price of a utility token is entirely independent of the secondary market price, in which case the secondary market speculation is really about currency value which is commodity speculation having nothing to do with the project or promoter. These types of utility tokens are much more akin to digital currencies in their relationship to securities laws.

- Once full functionality is achieved, there should be no expectation of profit from the efforts of others, and value should instead be driven by exogenous market factors. At such a point, the token should no longer be deemed an investment contract, as the transaction no longer meets the *Howey* test, and the offer and sale of tokens should no longer be subject to the requirements of the Securities Act;
- The requisite amount of functionality needed is fact-based, with marketing being an important determinant—if buyers would not buy the token for its present functionality, the token seller must build more present functionality before distributing the token to the public as a non-security;
- Marketing materials must focus on present functionality and use of the token, not on future features or resale opportunities, although a short description of any planned upgrades is permissible; and
- The token seller cannot promise to support secondary market trading of the token on any exchanges.

We believe the following facts tend to push the securities analysis one way or the other but are not by themselves dispositive (good facts push the analysis toward a non-security):

- Fixed or automatically increasing supply of tokens is generally a good fact. A fixed or automatically increasing supply is not characteristic of most traditional product sales, but it is also not characteristic of most securities offerings either.²² It is a currency-like characteristic and generally stems from the Bitcoin model and the fact that most utility tokens are used as currencies even if they have additional functions and features. A fixed or automatically increasing supply also helps the analysis around efforts of others in the sense that the promoter has no control over supply, which is a key element of price in the trading market.
- Diminishing token supply, either automatic or periodic, tends to indicate an intent on the part of the token seller to drive up the price of the token in the secondary markets. If this feature exists, there should be important structural reasons for this feature having nothing to do with the desire to influence price. This feature represents efforts of the promoter in structuring the token that not all courts would recognize as satisfying the *Howey* test to the extent the court applies the *Life Partners* test focusing on post-sale efforts rather than pre-sale efforts, but since this conclusion is in question, it is still considered to be a bad fact for purposes of utility token sales.
- Publicly announced discounts that diminish over a set schedule are problematic during a post-functionality token sale, especially if not accompanied by resale lockups. While this may be a practice used by conventional sellers of goods and services, in the context of utility tokens, it does tend to create an expectation of profits based on the efforts of the promoter to structure the token sale in this manner. Once again, these would be pre-sale efforts of the promoter, but it would still be considered a bad fact for a utility token sale. Also, the same practice would be appropriate during the pre-functionality token sale, because the purchasers are investors with a profit motive participating in a securities offering with the requisite protections in place.
- Allocations of a substantial number of tokens to the token seller team as well as to advisors, strategic partners and others for compensatory purposes, especially without any significant resale lockups in place, clearly puts tokens in the hands of persons with resale intent, not consumptive intent. This may not matter to the extent we have already assumed that most purchasers are purchasing with resale intent. At a minimum, if these allocations are granted pre-functionality, the grant must comply with Rule 701 or Regulation D or otherwise comply with U.S. securities laws. The real reason this could be a bad fact is that this practice may result in fraudulent “pump and dump” Ponzi-like schemes on the part of the persons receiving the allocations.
- Each of the factors discussed above in Section J that tend to establish consumptive intent rather than resale intent are good facts, particularly lockups that prohibit resale but not use for a significant period of time after purchase, which are an excellent way to curb “pump and dump” tendencies and to emphasize intent to use rather than resell.

²² Once again, event tickets are an example of a traditional good that does have a fixed supply.

L. Existing Regulations Applicable to Token Exchanges—CFTC Anti-Fraud Rules

The CFTC is responsible for enforcement actions against wrongful conduct in spot markets for digital currencies.²³ Historically, the CFTC has exercised that enforcement authority when there is a nexus to an actively traded commodity interest,²⁴ and, consistent with that approach, since the recent launch of digital currency-related derivative products, the CFTC has stepped up its enforcement actions against spot market abuses, although its initial digital currency-related actions began in 2015.²⁵ “Bitcoin and other virtual currencies” have already been deemed within the scope of ‘commodities’ under CFTC enforcement jurisdiction, and given the wide scope of the definition (the term commodity means “all other goods and articles [. . .] and all services, rights and interests [. . .] in which contracts for future delivery are presently or in the future dealt in”), any utility token with fungible characteristics falls within this scope.²⁶

In September 2017, in its complaint against *Gelfman*, the CFTC took action against alleged abuses in the Bitcoin spot market and charged operators of an alleged Ponzi scheme with fraud, misappropriation and issuing false account statements in violation of Section 6(c) of the CEA.²⁷ In January 2018, the CFTC brought three digital currency enforcement actions: (i) *My Big Coin Pay Inc.*, which charged the defendants with commodity fraud and misappropriation related to the ongoing solicitation of customers for a digital currency known as My Big Coin;²⁸ (ii) *The Entrepreneurs Headquarters Limited*, which charged the defendants with a fraudulent scheme to solicit Bitcoin from members of the public, misrepresenting that customers’ funds would be pooled and invested in products including binary options, making Ponzi-style payments to commodity pool participants from other participants’ funds, misappropriating pool participants’ funds, and failing to register as a Commodity Pool Operator;²⁹ and (iii) *CabbageTech, Corp.*, which charged the de-

²³The term digital currency means the same thing as virtual currency for purposes of this memorandum. In its enforcement order against Derivabit in September 2015, the CFTC confirmed that “Bitcoin and other virtual currencies are encompassed in the definition and properly defined as commodities.” *United States of America Before the Commodity Futures Trading Commission In the Matter of Coinflip Inc., d/b/a Derivabit, and Francisco Riordan, Respondents*. Order Instituting Proceedings Pursuant to Sections 6(c) and 6(d) of the Commodity Exchange Act, Making Findings and Imposing Remedial Sanctions. CFTC Docket No. 15–29, September 17, 2015. Available at: <http://www.cftc.gov/idc/groups/public/@lrenforcementactions/documents/legalpleading/enfcoinfliprorder09172015.pdf>.

²⁴CEA Sections 6c, 9a(2) and Part 180 of the CFTC’s regulations give the CFTC the authority, in relevant part, over violations with respect to “any commodity in interstate commerce.” 7 U.S. Code §§ 9, 13, and 17 CFR § 180, 76 FR 41398. There are two particular provisions of the CEA that grant the CFTC broad authority to take action against persons engaged in forms of market abuse, including manipulation and fraud, or attempted manipulation and fraud, Sections 6(c) and 9(a)2. Commission Regulation 180 (*i.e.*, Part 180) codifies Section 6(c).

²⁵In addition to the *Derivabit* action outlined above, the CFTC has also taken action against *TeraExchange* in 2015, and the spot exchange *Bitfinex* in 2016, for CEA violations associated with virtual currencies. See *United States of America Before the Commodity Futures Trading Commission In the Matter of TeraExchange LLC Respondent*. Order Instituting Proceedings Pursuant to Sections 6(c) and 6(d) of the Commodity Exchange Act, as amended, Making Findings and Imposing Remedial Sanctions. CFTC Docket No. 15–33, September 24, 2015. Available at: <http://www.cftc.gov/idc/groups/public/@lrenforcementactions/documents/legalpleading/enfteraexchangeorder92415.pdf>. See also *United States of America Before the Commodity Futures Trading Commission In the Matter of BFXNA Inc. d/b/a BITFINEX, Respondent*. Order Instituting Proceedings Pursuant to Sections 6(c) and 6(d) of the Commodity Exchange Act, as amended, Making Findings and Imposing Remedial Sanctions. CFTC Docket No. 16–19, June 2, 2016. Available at: <http://www.cftc.gov/idc/groups/public/@lrenforcementactions/documents/legalpleading/enfbfxnaorder060216.pdf>.

²⁶CEA Section 1a(9), 7 U.S. Code § 1.

²⁷*Commodity Futures Trading Commission v. Gelfman Blueprint, Inc. and Nicholas Gelfman*, Case Number 17–7181, United States District Court, Southern District of New York. Complaint filed September 21, 2017. Available at: <http://www.cftc.gov/idc/groups/public/@lrenforcementactions/documents/legalpleading/enfgelfmancomplaint09212017.pdf>.

²⁸*Commodity Futures Trading Commission v. My Big Coin Pay, Inc., Randall Crater, and Mark Gillespie*, Case Number 18–10077–RWZ, United States District Court, District of Massachusetts. Complaint filed January 16, 2018. Available at: <http://www.cftc.gov/idc/groups/public/@lrenforcementactions/documents/legalpleading/enfmybigcoinpaycompli011618.pdf>.

²⁹*Commodity Futures Trading Commission v. Dillon Michael Dean and the Entrepreneur Headquarters Limited*, Case Number 18–cv–00345, United States District Court, Eastern District of New York. Complaint filed January 18, 2018. Available at: <http://www.cftc.gov/idc/groups/public/@lrenforcementactions/documents/legalpleading/enfentrepreneurscompli011818.pdf>.

defendants with fraud and misappropriation in connection with purchases and trading of Bitcoin and Litecoin.³⁰

The CFTC also appears to be closely monitoring digital currency spot exchanges as part of these efforts. As part of the self-certification process for Bitcoin futures products by certain Designated Contract Markets (“DCMs”), the CFTC expects information sharing agreements to be in place with underlying spot exchanges in accordance with the second core principle for DCMs.³¹ On February 15, 2018, the CFTC once again reminded market participants in a customer protection action that it “maintains general anti-fraud and manipulation enforcement authority over virtual currency cash markets as a commodity in interstate commerce.”³² It has also apparently (i) requested information from GDAX in relation to an alleged ‘flash crash’ which occurred on June 21, 2017,³³ and (ii) issued subpoenas regarding alleged conduct at the Hong Kong-based exchange Bitfinex.³⁴

Reinforcing the inherent scope of the CFTC’s enforcement authority is the possibility of aiding and abetting violations that act to restrain certain industry service providers or other market participants associated with any alleged violations.³⁵ The efficacy of this regulation by proscription is further reinforced by the ability of private litigants to take actions under the above provisions, subject to certain additional requirements.³⁶ For a private actor to make a claim, they must demonstrate, *inter alia*, that they purchased or sold a derivative contract referencing a digital currency and prove actual damages resulting from the proscribed conduct. Although this right of action therefore relies on a nexus to the digital currency derivative market, as the number and diversity of digital currency based derivative products continues to grow so too does the number of potential plaintiffs.

M. Conclusion

The *Howey* test is fundamentally based on facts and circumstances—the economic realities—of the offer and sale of the underlying product or service.³⁷ As circumstances change, the results of the test should change as well. Specifically, when the circumstances under which parties agree to enter into a pre-functionality token sale agreement have changed by the time the underlying tokens are delivered, an analysis which concluded that the pre-functionality token sale agreement constituted an investment contract may no longer apply to the tokens. On the other hand, if circumstances have not changed materially, new token sale agreements may constitute investment contracts in their own right, even after delivery under the initial pre-functionality token sale agreement.

A pre-functionality token sale agreement may be found to constitute an investment contract even if the future tokens will not qualify as investment contracts or other securities at the time of their delivery. When a seller offers and sells the pre-functionality token sale agreements by emphasizing the potential value of the future

³⁰ *Commodity Futures Trading Commission v. Patrick K. McDonnell, and CabbageTech Corp. d/b/a Coin Drop Markets*, Case Number 18-cv-0361, United States District Court, Eastern District of New York. Complaint filed January 18, 2018. Available at: <http://www.cftc.gov/idc/groups/public/@enforcementactions/documents/legalpleading/enfdmcomplaint011818.pdf>.

³¹ See CFTC *Backgrounder on Self-Certified Contracts for Bitcoin Products*, December 1, 2017. Available at: http://www.cftc.gov/idc/groups/public/@newsroom/documents/file/bitcoin_factsheet120117.pdf. See also CFTC *Statement on Self-Certification of Bitcoin Products by CME, CFE and Cantor Exchange*, December 1, 2017. Available at: <http://www.cftc.gov/PressRoom/PressReleases/pr7654-17>.

³² CFTC *Customer Advisory: Beware Virtual Currency Pump-and-Dump Schemes*, February 15, 2018. Available at: http://www.cftc.gov/idc/groups/public/@customerprotection/documents/file/customeradvisory_pumpdump0218.pdf.

³³ Lily Katz and Matt Robinson, *Cryptocurrency Flash Crash Draws Scrutiny from Watchdog*, BLOOMBERG.COM, October 2, 2017. Available at: <https://www.bloomberg.com/news/articles/2017-10-02/cryptocurrency-flash-crash-is-said-to-draw-scrutiny-from-cftc>.

³⁴ Matthew Leising, *U.S. Regulators Subpoena Crypto Exchange Bitfinex, Tether*, BLOOMBERG.COM, January 30, 2018. Available at: <https://www.bloomberg.com/news/articles/2018-01-30/crypto-exchange-bitfinex-tether-said-to-get-subpoenaed-by-cftc>.

³⁵ To prove an aiding and abetting violation under the CEA (7 U.S. Code § 25(a)(1)), it must be shown that the defendant “in some sort associate himself with the venture, that he participate in it as in something that he wishes to bring about, that he seek by his action to make it succeed.” *CFTC v. Amaranth Advisors, L.L.C.*, 554 F. Supp. 2d 523 (2008) stating the appropriate standard for aiding and abetting under the CEA, quoting Learned Hand J. in *United States v. Peoni*, 100 F.2d 401, 402 (2d Cir.1938).

³⁶ 7 U.S. Code § 25(a)(1)(D) provides that a private litigant can take action for fraud, attempted fraud or if the violation constitutes “a manipulation of the price of any such contract or swap or the price of the commodity underlying such contract or swap.”

³⁷ *Howey*, *supra* note 2 at 299. (The *Howey* test “embodies a flexible rather than a static principle, one that is capable of adaptation to meet the countless and variable schemes devised by those who seek the use of the money of others on the promise of profits.”)

tokens, uses the proceeds of the pre-functionality token sale agreements to complete development of an application for the tokens and undertakes to conduct a public sale of the tokens with a target price above the pre-functionality price, these circumstances may provide a basis for the SEC or a court to conclude that the pre-functionality token sale agreements are investment contracts. Once the network or software application for the tokens is developed, these circumstances would no longer apply and, thus, could no longer provide a basis for concluding that further sales of tokens would constitute investment contracts. Even if the pre-functionality purchasers reasonably anticipate that a token will appreciate above its public sale price, any such appreciation should result from general market forces rather than the efforts of the seller. Therefore, once the investment contract implied by the pre-functionality token sale agreement has been completed (*i.e.*, at the time of tokens are delivered), the tokens should no longer involve a common enterprise in which the seller's efforts are reasonably expected to produce profits for the token purchasers.

N. Epilogue

While not directly related to the above conclusion, here are some additional thoughts worth considering.

1. Relevant Disclosure

Ultimately, the Securities Act is a disclosure regime. One important way to look at this situation is to ask what the relevant disclosure would be post-functionality. Existing disclosure rules assume the security represents either equity or debt, neither of which would be appropriate disclosure rules for utility tokens. It would not be wise, for example, to include disclosure about the token seller, or we would confuse the purchasers into believing they have some interest in the token seller, which they do not. Perhaps some disclosure would be appropriate about the real risk here, namely that the market price is extremely volatile, but that is now patently obvious to anyone sitting in front of a computer and is not something about which the token seller has any special information or expertise to provide. Maybe some disclosure about overhang would make sense, especially if the token seller happens to be aware of any large purchasers, but this disclosure again risks providing false comfort to the market since the token seller, unlike an equity issuer, has no way of knowing who holds any particular percentage of the tokens from time to time. We have to ask ourselves, if there is no relevant disclosure that could possibly be provided by the token seller post-functionality, are we really dealing with a securities transaction that is appropriately regulated under a disclosure regime, or are the regulatory concerns really about trading price manipulation covered by the CFTC's anti-fraud rules for spot trading?

2. Common Enterprise

We have not considered the common enterprise prong of the *Howey* test in the above discussion because the courts are fractured over the best way to interpret this prong of the test. This fact, however, cuts both ways. It is not prudent for a token seller to rely on this test as the sole prong to hang its hat on, or for regulators to assume it will be easy to prove (and the regulator must prove it to win in court).

Indeed, the most commonly applied interpretation of this prong involves horizontal commonality, which doesn't appear to be the case once tokens have achieved full functionality and are sold to purchasers as a product. There are no contractual commitments on the part of the token seller surviving the post-functionality token sale. The proceeds of a post-functionality token sale cannot be said to be pooled in any enterprise of which the token holders own a share or interest. It is true that narrow vertical commonality will often exist in the sense that the token seller's fortunes are often tied to the same market dynamics as the token holders to the extent the price of tokens rises and the token seller has retained an inventory of tokens for future sale. Perhaps for the very reason that this type of commonality would apply to every seller of a good or service that is hoping for the prices of its goods to go up, very few courts have held that narrow vertical commonality is sufficient by itself to satisfy the common enterprise prong. Broad vertical commonality, meaning that the fortunes of the token holder are tied to the efforts of the token seller would be subsumed within the efforts of others prong, so it would not be sufficient for merely **some** efforts of the promoter to satisfy the *Howey* test for all the reasons described above with respect to the efforts of others prong showing that those efforts must predominate the expectation of profits. From the regulator's perspective, at best, the common enterprise prong adds nothing to the analysis, but in all likelihood, it represents a very significant hurdle to overcome in court.

3. Fraudulent Sales Tactics—Pump and Dump

We have pointed out in several instances above that, if we apply existing case law with analytical consistency, the mere marketing of a post-functionality token (or any commodity, such as gold coins) as an investment should not, by itself, cause the offering to satisfy the *Howey* test. Nevertheless, we leave open the possibility that the presence of abusive marketing tactics or running a so-called “pump and dump” scheme can satisfy the efforts of others prong in that purchasers would expect to profit on the continuation of those abusive promotional efforts. In any market environment, that would be sufficient basis for satisfying *Howey* if the other prongs were also satisfied. Moreover, token sellers would be unwise to ever refer to the token as an investment, whether pre- or post-functionality, because those statements will live on and be discoverable with an Internet search even at some future time when the token seller would like to be able to conclude that the efforts of others prong is no longer the only prong available to avoid satisfying the *Howey* test (e.g., if the token seller wants to market future features after the market has cooled down and the tokens are being used instead of resold for the most part). As such, we do not expect this technical point—that commodities may be marketed as investments—to lead to problematic behavior in the context of token sales.

4. *Reves* Test

It is important not to confuse the *Reves* test with the *Howey* test. Some of the *Reves* factors are similar to some of the *Howey* prongs. The first *Reves* factor examines the transaction in order to assess the motivations that would prompt a reasonable lender (buyer) and creditor (seller) to enter into it. For example, was the transaction in question an investment transaction or a commercial or consumer transaction? This factor might be confused with the expectation of profits element of the *Howey* test. In *Reves* the satisfaction of any one factor, if strong enough, can cause the note to qualify as a security. This confusion may lead to the incorrect application of *Howey* which requires **every** prong to be satisfied, regardless of how clearly any one factor may be satisfied, for the arrangement to qualify as an investment contract. Again, it is not sufficient for an expectation of profits to exist with respect to an asset that may even be marketed as an investment, if the expectation is not based on the efforts of others. Analytically, it just doesn’t matter in how many ways and how clearly the expectation of profits prong is satisfied if those expectations are not based on the efforts of others.

In addition, some of the *Reves* factors would appear relevant to utility tokens, especially the second factor, which is the plan of distribution used in the offering and selling the instrument—for example, is the instrument commonly traded for investment or speculation? While it may be tempting to consider the trading markets for utility tokens to be dispositive of the issue of whether a utility token is a security, that is not the case. As discussed above, it is merely one more fact tending to establish the expectation of profits element of the *Howey* test, which may be overridden by the other prongs.

5. Policy Considerations

Blockchain technology is as transformative as the Internet. While the Internet was about the movement of information (and set off lots of new legal concerns around privacy and data security), blockchain technology is about the movement of value. The key innovation, as with the Internet, is found in the frictionless nature of the movement. It has already led to important new business models never seen before. It will ultimately lead to rapid frictionless liquidity for every asset class and every good and service. Wherever possible, it will be important to regulate based on looking through the token to the thing being tokenized for the right regulatory treatment. But, it will mean things like novel software applications suddenly have unprecedented trading characteristics that need to be evaluated under existing law. Fortunately, the *Howey* test is based on facts and circumstances and focuses on the economic substance of the transaction, so it should stand the test of time as this disruptive technology changes our daily norms.

Blockchain technology is expanding at a rapid pace. Other jurisdictions like China have taken a very stilted binary approach to regulating token sales by simply banning them because their laws are not developed enough to be useful as a means of preventing bad actors while permitting good actors. Other jurisdictions have aggressively embraced blockchain technology and have instantly become magnets for blockchain entrepreneurs as today’s workforce is more mobile than ever.

Over time, this recent spate of irrational exuberance associated with this novel technology will subside and consumptive intent will predominate once again. In that future state, it would not make any sense to have taken a position that all tokens are securities in perpetuity. This would be tantamount to following China’s lead as

this would shut down the entire ecosystem, at least here in the United States. Fundamentally, utility tokens are intended to be used as non-securities in a network or application. They could not be used for their intended purpose (*e.g.*, micro payments for micro tasks, or loyalty rewards) if they are categorized as securities under U.S. law, so all of this innovation would need to move offshore and the United States would be one more jurisdiction added to the list of disqualified jurisdictions along with China and New York (because of the overbroad BitLicense). It makes more sense to draw a line today that is grounded in intellectual rigor and analytical consistency, which uses the flexibility of *Howey* to regulate the bad actors while permitting the good actors to continue to innovate with Blockchain technology here in the United States.

The CHAIRMAN. Thank you, Mr. Ness.

The chair reminds Members that they will be recognized for questioning in the order of seniority for Members who were here at the start of the hearing. After that, Members will be recognized in the order of arrival. I appreciate Members' understanding, and I will recognize myself for 5 minutes.

Mr. Ness, I agree with you that if we don't get this right and we flush the innovators offshore into other countries, that getting them back is a lot more difficult. We are at the start of the process with this hearing so that we can get to an answer that doesn't do that.

Ms. Baldet and Mr. Kupor, you each noted that tokens in crypto-networks have the potential to create next generation open Internet protocols. Can you flesh that out a little bit for the laymen and myself that understand the words, but if you can tell us what those actually mean, that would be a little helpful.

Ms. BALDET. Sure, thank you.

When we say *open*, open means a couple things. In this case, we mostly mean open access when we say public blockchains, which means that anyone can join the network. It has to do with the degree of gatekeeping, which is not necessarily an all or nothing kind of a decision. If we start thinking of public blockchains as being more like a public commons, it is a lot more like the Internet wherein you have a lot of choice as to how you access that sort of network.

We also usually mean open source, as Mr. Kupor mentioned, so that we are allowing auditing of that code which increases trust of the code, and most of the core technology that powers the backbone of the Internet is open source.

Mr. KUPOR. I agree with all that. I would just to give you a very specific example, imagine in the future a social network. Today, as users of social networks, of course, you have an intermediary, in many cases, a company like Facebook who obviously is taking and utilizing the consumer data, and then obviously developing relations with advertisers and others as a way to monetize that data. That is their business model.

In the future, utilizing a crypto-network, you can imagine a world where you as the user own your data. That data is cryptographically secured, and you choose which data you want to expose to various advertisers or other promoters, and the flow of economic value in that case, as opposed to going through an intermediary, might be going directly from an advertiser or a promoter of products to you as an individual as you have kind of governed the use of that data. That would be, in very broad terms, a kind of expansive view of what this could look like.

The CHAIRMAN. All right. Mr. Fairfield, you talked about the *Howey* test, which seems to be the gold standard among securities lawyers who can spell that last name. Can you talk about that being maybe the outer edges?

One of the questions we are trying to answer is are they securities or commodities, and where does that transition occur? Can you talk to us better about this *Howey* test and why you think that is the outer edge, and just how should it apply to distinguishing between commodities and securities?

Mr. FAIRFIELD. Certainly. There are two questions. The first is lawyers are inventive. They can rework the formal form of a transaction to make it into anything. *Howey* describes the outer limit of the kinds of legal forms that can be turned into investment contracts, that can be turned into this sort of exchange. I give you money now, and I wait and I reap the benefit of your labor on the other end.

But the difficulty with that is that while courts must be able to look to the economic realities of the transaction, look underneath the form because if we just look at the form, if we just look at what it is called, then anyone can title the asset whatever they want at the top of a piece of paper and escape whatever regulation they want.

Courts have to look past the formal titling of the asset to the economic realities of it; however, they also have to understand that the very flexibility of these tools, both the flexibility of legal forms and the flexibility of this database technology means that it is very possible for people to be using a product for one entirely legitimate purpose and have other people begin to use it for different purposes.

An example of this from outside of the cryptocurrency area entirely would be the discussion we had several decades ago on VCRs. The question was some people use them to make illegal copies. Many people don't. How far are we willing to go in rooting out bad uses that we are beginning to cut away healthy tissue? And that is why I believe *Howey* is the outer circle. It is necessary that it be there so that SEC, in this particular case, can reach cases in which people are labeling something one formal legal form, but are actually engaging in an investment contract. That is what it is there for, but it doesn't really tell us anything about what the regulatory landscape should actually look like at the end of the day. In fact, the regulatory landscape, in my estimation, should and will look like something substantially different. It will look like a bit of a handoff, like a relay race in which for certain functions and for certain conditions, one overseer may have authority. Under [audio malfunction in hearing room].

The CHAIRMAN. Sorry, I lost your microphone. Thank you, Mr. Fairfield.

Ranking Member Peterson, 5 minutes.

Mr. PETERSON. Thank you, Mr. Chairman. I don't know where to start.

I am somebody that believes we should still be on the gold standard, and we should audit the Fed because I don't really trust them.

What worries me about this is that you say there are \$250 billion of capitalization here or whatever, how much money is actually

here. This just seems like a Ponzi scheme to me. I think the stock market is a casino, so that is where I am coming from.

If I am going to send \$100,000 to somebody through one of these deals, who is going to stand behind it? I give the money to one of you guys and then you turn around and create these things and send it to somebody else. Well, in the meantime, what if you went broke? I was involved when we found out about credit default swaps and figured out that everybody was trading these things and there was nothing there, and if we wouldn't have stopped them the whole economy would have collapsed. I don't know if we have a similar situation going on here with this, but what is behind this? If there is no money at the end of the day, who is going to make up for this? Can anybody explain that to me? Mr. Gensler?

Mr. GENSLER. Could I take a shot?

I think that I would split it in two buckets. In this field where venture capitalists, entrepreneurs are developing an idea and asking people for money, they publish a White Paper, they build up a following, Reddit posts—these are different communities, social network posts, a medium and so forth—and they build a following and then they sell it and raise money. And sometimes it is small, just like a crowdfunding on Kickstarter. But most of them aren't. There have been 3,800 of them to date. Over 50 percent of them fail within 4 months, and there are different estimates how many are scams and frauds. There are good faith actors in the middle of it, too, a lot of good faith actors, but there are a lot of frauds and scams.

Right now, if they fail, the only thing you could do is try under the securities laws to say they were an unregistered, noncompliant security and try—under the private rights of actions under securities law—to get something back; or do nothing.

And the second category is digital gold. The digital gold, which is Bitcoin, and while there is nothing behind it, I would say, Mr. Ranking Member, there is really nothing behind gold either. All of this, we have what is behind it is a cultural norm that for thousands of years we like gold. The worldwide value of gold is \$7 trillion, by the way, just to give you a little sense, but only about ten percent of the annual production of gold is used in manufacturing. The rest of it is because we think it is kind of nice to have gold necklaces and jewelry, or we do it as a store value. Bitcoin is a modern form of digital gold and it is a social construct.

Mr. PETERSON. They are just creating this money out of nowhere.

Mr. GENSLER. In the first category, the investor type that would be under the SEC.

Mr. PETERSON. No, I get that.

Mr. GENSLER. But in the second category, you are right, which was under this Committee. You are going to be grappling with this for a while.

Mr. PETERSON. No, I know.

Mr. GENSLER. It is digital gold.

Mr. PETERSON. In the first category, I assume those people are sophisticated enough to realize they are going to get fleeced potentially?

There are people that get into that area that don't realize what they are getting into. They think they are going to get rich and

they are going to get into this deal ahead of everything else and they are going to make 10,000 percent on their money and whatever else, and some guy is selling them on this. I don't know where the protection is here for people.

Mr. GENSLER. Some are very sophisticated like Andreessen Horowitz and they manage \$7 billion. There are many like that, but there are others that aren't. But you are right. The Securities and Exchange Commission has a lot of work ahead of them to sort of bring this market into—the first part of the market. Seventy percent of the market is commodities, but the first part, this ICO marketplace, is the SEC's—they are working at it, but they have a lot of work ahead.

Mr. KUPOR. If I could just add, Mr. Ranking Member, you raise this concept of a kind of trust, right, which is who do I trust? What is the trusted intermediary?

The beauty, at least, certainly from the perspective of an investor and as a consumer, the beauty of these crypto-networks is what you are trusting is you are trusting cryptography, you are trusting math, you are trusting software as opposed to a centralized intermediary, and you have a community that is governing the interest there. In other words, if the community tries to do something that is inappropriate, all of the software is open source. All of the software can be basically what is called forked and literally taken over and recreated in a new community. There is a norm of community governance that exists in these areas that really substitutes trust from a centralized intermediary to trust to a community that is responsible for government.

Mr. PETERSON. Thank you, but I am still skeptical.

The CHAIRMAN. Mr. Lucas, 5 minutes.

Mr. LUCAS. Thank you, Mr. Chairman, and along with the gentleman from Georgia, Mr. Scott, I have the privilege of sitting both on this Committee and the Financial Services Committee, so I welcome this discussion by the panel when it comes to the next regulatory frontier as it impacts the two Committees.

First, Mr. Kupor, how should regulators think about the function of the token when choosing to apply regulatory requirements? Should regulators look to the functioning of the token at all, or only the issuing activity?

For example, say there is a cryptocurrency. We will call it, for the sake of discussion, Bitcoin 2.0, and say it functions identically to Bitcoin in every way except that a small portion of the total tokens were pre-mined and distributed in token sale. It is possible to issue Bitcoin 2.0 through ICO and not have it be a security, or is the functioning of the token irrelevant because of the manner in which it is issued?

I am asking what my folks back home would define as geek questions, but this is where we are.

Mr. KUPOR. Yes, sir.

Mr. LUCAS. What say you?

Mr. KUPOR. Yes, to a couple of things.

The issuance of those tokens and the sale of those tokens in exchange for money before a network exists, I do believe is what is called an investment contract and should be regulated as such.

If I develop a white paper and I tell you I am going to build this thing and you give me money for it before it exists, if I fleece you, absolutely the SEC has jurisdiction to bring me up on securities fraud charges. You have private cause of action. No question about it there.

Once the network is functional and therefore, the tokens are doing what they were intended to do, whether that is storage or other things, the value of that token now really is not a function of the efforts of the developer, it is really the question of what is the utility of that token, much like any other commodity. Therefore, certainly my view is that in that case, the underlying token itself should be regulated as if it were a commodity because that is actually kind of the nature of what it is actually doing.

Mr. LUCAS. Thank you.

Mr. Ness, the last prong of the *Howey* test identifies an investment contractor transaction in which an individual expects profits solely from the efforts of the promoter or the third party. Yet, for almost every token project, there are multiple avenues for a holder to come into possession of a token. When a network is fully functional, tokens can be purchased through promoter, traded on a secondary market exchange within a network, or earned by performing work to support the network. In each of these cases, the efforts of the holder vary and can implicate the *Howey* test differently. How should regulators think of an asset that has multiple methods of delivery, an asset that can be both purchased and earned, or should the method of delivery determine the regulatory regime governing an asset?

Mr. NESS. Fortunately, it is a relatively simple answer, which is that it really comes down to the same test, which is pre-functionality *versus* post-functionality, or whatever we end up deciding is the trigger point for determining the different status.

It seems to me that however you come by this, I suppose there are two fundamentally different ways. One is to get it from the issuer directly, the other is to get it from some third party. And if it is in pre-functional—the pre-functional stage and you are obtaining it from the issuer, I would argue that is a primary offering of an investment contract, even if it is essentially earned on a network, because at that point there is a lot of case law out there if you do work for a security, you have paid for the security. There is consideration there in the services.

I wouldn't say that there is a difference between earning it *versus* buying it. It going to be a security, based on its characteristics as we end up defining them, pre-functionality *versus* post-functionality.

Mr. LUCAS. Mr. Gorfine, in your testimony you mentioned the new working group set up by FSOC and the Commission's work with the SEC and other regulators. This Committee cares a lot about coordination between financial regulators when it comes to these sorts of matters. Can you talk more about how the regulators, including the CFTC, are working together, I should say, to understand and clarify their overlapping jurisdictions and how it affects the virtual currencies?

Mr. GORFINE. Yes, thank you. It is a great question and we agree that coordination and collaboration with our sister agencies is very important on this type of a topic.

One thing about this space that is common across a lot of areas of financial technology is that it inherently cuts across geographic and jurisdictional boundaries. It is very important to make sure that we are coordinated in sharing information with each other.

Certainly, on the topic of cryptocurrencies, we are working closely with the SEC to make sure that we are coordinated. And just to step back and explain how we view our rule set, the definition of *commodity* under our statute is very broad. A lot of things are commodities and we are soon after the World Cup, so think about soccer balls. Those are commodities. Just because something is necessarily a commodity doesn't mean that we have a direct regulatory interest. It is only when we start to see the rise of futures or swaps products built on those commodities that we have direct oversight.

But when the SEC applies the *Howey* test and determines whether something fits within a securities law framework, that certainly matters to us because then that is something that would fall under their jurisdiction. Hence the need for us to be in close communication with the SEC.

Mr. LUCAS. Mr. Chairman, if you would indulge me for one last thought.

For a number of years, I sat next to Ron Paul on the Financial Services Committee, so when Mr. Peterson brought up his observations about gold standard, I can't help but think about Mr. Paul's story noting that when the Roosevelt Administration took us off the gold standard in 1933, they sealed every safe deposit box in every financial institution in America and before you could open it, you had to have Federal official of appropriate nature or state designee to be with you so they could make sure you didn't have any gold coins, gold bars, or gold certificates in those safe deposit boxes. The Ranking Member brings up some interesting observations. Even gold wasn't safe in 1933.

I yield back, Mr. Chairman.

The CHAIRMAN. The long reach of government. Thank you.

David Scott, 5 minutes.

Mr. DAVID SCOTT of Georgia. Thank you, Mr. Chairman.

There is a good amount of very serious and legitimate concerns about coins that are being offered. I am not sure we realize it, but there are over 1,600 coins currently and growing every day. And we have to look closely and watch how these coins are being used, and if it is appropriate for them to be regulated, to make sure that they are not being used improperly. I am not sure that the panelists or the audience or those who may be watching via television know, but I find it very concerning that in the indictment of the 12 Russian hackers that hacked the DNC's servers, did you know that they included in those charges within the indictment was the fact that the Russian hackers used principally Bitcoin when purchasing the servers, when registering the domains, and otherwise making payments in furtherance of illegal hacking activity on the United States elections?

What I am saying is that with every new tool, our technology is moving fast. It is growing at a rapid rate, and we have to grab hold

on what we are doing to make sure that we do everything we can to ensure that these new coins are not being used illegally or for illicit activities, like when the Russians attacked our election system.

Now, I also have read in some news coverage studies that are out there that think that not all of these ICOs are a positive thing. There is a lot of debate on that, and our Ranking Member, Mr. Peterson, expressed it best of all.

For example, a recent Statistix group study found that over 80 percent of initial coin offerings are scams. In fact, they broke ICOs into six groups, scam ICOs, failed ICOs, gone dead ICOs, dwindling ICOs, promising ICOs, and then successful ICOs. And on the basis of these above six classifications, they wrote that they found that approximately 81 percent of our ICOs were scams. Six percent were failed. Five percent had gone dead, and eight percent went on to trade on the exchange.

I want to ask the panel, with this evidence, does this seem right to you? Is 80 percent high? Are the risks being blown out of proportion for these studies?

Let's start with Mr. Gorfine. You mentioned in your testimony that LabCFTC published in its first FinTech primer on virtual currency late last year. What more can we do to protect investors? And I want to get each of you in my last minute here. Just say yes or no, are we in trouble? Is this thing serving us or are we serving it?

Mr. GORFINE. I will try to be brief, and we share your concern. And you mentioned the LabCFTC primer which we published in October of last year, and the way that the primer is structured is that it concludes with a discussion of risks and challenges that we believe market participants need to be aware of. Just this week on Monday, and I would encourage the public that is viewing this today to take a look at a customer advisory that we published through our Office of Customer Education and Outreach where we are tackling exactly this issue, which is that it is a very speculative, risky space, especially for retail participants to be participating, and we encourage them to really do their research and ask themselves important questions about the value of a lot of the different types of offerings that are out there. It is an area that we think education is a key component. I will also add that from an enforcement perspective, the CFTC, as well as a lot of other agencies, are looking to target bad actors that are trying to take advantage of a lot of the enthusiasm around this space.

The combination of education, enforcement, and then proactive engagement as LabCFTC is doing are important regulatory tools for us to deploy.

Mr. DAVID SCOTT of Georgia. Thank you, Mr. Chairman.

The CHAIRMAN. The gentleman's time has expired.

Austin Scott, 5 minutes.

Mr. AUSTIN SCOTT of Georgia. Thank you, Mr. Chairman.

We are a long way away from peanut fields in Sycamore, Georgia, and I can't help but wonder if somebody who, prior to getting elected to Congress, actually had a series 7, what would a prospectus on coin offering look like? I don't know if it would be one page or 10,000 pages or more, but one thing that is clear to me is

that you can certainly create a coin for anything. You can create a coin for any color. You can create a coin for any opposite color. There is an infinite number of coins that can be created.

I see no way to regulate every coin offering that is out there, but I would also tell you that when you turn on CNBC and they show the Dow, the S&P, and the Nasdaq on one side of the screen and on the other side of the screen is a value for Bitcoin, then certainly it has reached the level where we need to have some sort of regulatory certainty in this area.

Most of my questions are for Mr. Gorfine. You run LabCFTC, and you have held office hours around the country where you have met with many people in the industry. Can you tell us about the interesting concerns of the developers who are working on token-based projects, and how sensitive they are to the regulatory environment?

Mr. GORFINE. Yes, thank you for the question, and in fact, I am heading this afternoon up to New York to have another round of office hours with innovators.

We have had an incredible opportunity to go to various cities and meet with folks that are heavily involved in a lot of projects across the spectrum that you have heard about today, and it strikes me that it is a new generation that is really looking through a technology lens as to how we can transform markets, make markets more efficient and effective. But there are a lot of questions that they have, and that is the reason we have the engagement function of LabCFTC. A lot of folks are trying to get a lay of the land and start to understand the alphabet soup of regulators in D.C., so through LabCFTC, we do try to establish some guideposts and educate as to how our framework applies. And in some situations, we will explain, "Well, this is where the CFTC fits and then there are questions that you may need to look at securities laws to understand the interplay there."

But in response to a lot of common questions we were getting, that is why we published the FinTech primer. It is our way of facilitating conversation with the community to make sure we are being responsive, and where possible, providing as much clarity as we can.

Other efforts of CFTC have been around things like actual delivery is a question that comes up a lot in the cryptocurrency realm, so our Division of Markets and Oversight has put out a draft interpretation that deals with actual delivery. All of these are efforts to start enhancing and providing as much clarity as we can.

Mr. AUSTIN SCOTT of Georgia. Mr. Gorfine, you suggest in your testimony that the Commission has an interest in this technology being used for capital markets infrastructure. Many of us on this Committee, including myself, have introduced a piece of legislation, the CFTC Research Modernization Act. Have you had a chance to review that legislation, and do you think it could help the Commission understand the emerging financial technologies and help us better understand how we need to regulate, or in some cases, not regulate certain areas?

Mr. GORFINE. Yes, thank you. One of the things that we are really focused on doing is making sure that we are engaging with technologies and fully understanding them. What you are raising is the

ability to give the CFTC authority to research and test new technologies.

I will give one example of how that may work in this space. We talked a little bit about private and permissioned distributed ledger technologies, which could impact and improve capital markets infrastructure. There is a lot of interest for market participants who are saying there may be more efficient ways for us to do, for example, regulatory reporting, in a lower cost way for them and in a way that for the regulator is more consumable. If we can receive standardized data without the traditional push process, that could be very valuable. What you are pointing out, Congressman, is that authority that is proposed in your legislation would allow us to actually work with a consortia of folks that are trying to create that type of infrastructure, and that way from a CFTC perspective we could better understand how can this technology benefit our markets? How would regulatory reporting be facilitated, and lift the hood and really understand the technology instead of having the high level conversation.

Those types of authorities would be very, very helpful to us.

Mr. AUSTIN SCOTT of Georgia. Thank you very much.

The CHAIRMAN. The gentleman's time has expired.

Ms. Kuster, 5 minutes.

Ms. KUSTER. Thank you very much, Mr. Chairman, and thank you witnesses. This has been a very enlightening hearing, and I appreciate all the wisdom.

Mr. Gorfine, picking up on the CFTC regulation, such as it is; do you have sufficient resources at the CFTC, or what would you recommend that you need from Congress, going forward?

Mr. GORFINE. Thank you. Well, I will harness the Chairman on this. Our Chairman has been very vocal about the need for the CFTC to have the right resources to be able to keep pace with our markets and regulate our markets most effectively. I believe he has asked for \$281 million for our budget, and a lot of those resources would be utilized, not only with bringing in economists, but also making sure we have the technologists in house to be able to keep pace.

I am a lawyer. I know a couple layers deep of the onion when you are talking about technologies, but we really need to be able to get to the core of technology to make sure that we are ascertaining where new risks are arising. Certainly, with greater resources, our agency would be able to even scale up some of those activities.

Ms. KUSTER. I would just say for the record one obvious place to look for those resources would be to get the IRS on top of how to tax the benefits and the gains that are being made, because one of the most troubling comments today is that the IRS is not on top of how to capture those gains. That is something that we need to look at, but it is also something on your side with some conversations with your counterparts at the IRS.

I want to quickly turn to the two professors and get a sense of a very troublesome aspect of this, and if anyone else wants to comment. Analysts last year identified that four percent of the addresses hold 97 percent of the Bitcoin in the world, and the philosophical goal of Bitcoin is to replace government-backed fiat currency. But

if that goal is achieved, you would have an unprecedented amount of wealth and power concentrated in the hands of a very small number of people. Is this concerning to you, and what should lawmakers be doing in this regard?

There are couple of minutes left, and—

Mr. GENSLER. To some extent it is not surprising, because most small economics ends up with some centralization. An irony is that the technology is supposed to be a decentralized peer-to-peer—

Ms. KUSTER. That was why the statistic struck me, because all the commentary has been this is all—

Mr. GENSLER. And so it is one of the natural ironies, because all humans tend towards clusters and clumps and centralization.

Ms. KUSTER. And taking into account with the indictment that some of these addresses are in Russia with people that want to do harm to our country.

Mr. GENSLER. More specifically to your question, some of that concentration is because it is the large exchanges, the crypto-exchanges, like Coin Base has 20 million accounts. They may not all be active, and they hold \$20 billion of crypto-funds. I should have said the market went up in the last day, so it is now about \$290 billion. But just one exchange has a big chunk of it. I don't know if that—

Ms. KUSTER. Is that then owned by multiple parties?

Mr. GENSLER. I will speak a little bit like an accountant, which I know the Chairman can appreciate, but it is that Coin Base has several accounts, but they are only there at Coin Base. But if I wanted to trade, then I have an account at Coin Base. These addresses would be in Coin Base's name, not in my name. I only have a right to Coin Base. Coin Base has whatever you want to call a right on this ledger. And part of—

Ms. KUSTER. Part of my question is that not very many people end up controlling and influencing, and if the long-term goal is to cut out state-sponsored currency, that is problematic in my view.

Ms. BALDET. Yes, you are right to be concerned about the centralization of power, but when it is not necessarily so that a single address equates to a single legal entity in any way. Any one person can generate any number of addresses that have smaller or larger amounts, and we don't really have a proper way to be able to tie that—

Ms. KUSTER. How would you describe to the public watching today the distribution of influence?

Ms. BALDET. There certainly are loci of power, but also if you look at the movement in some of those earlier addresses or larger addresses, it is commonly accepted that about 25 percent of something on a network like Bitcoin have not moved or basically been lost at this point, and so you will see funds sitting in places and simply not moving, and the common consensus is that the private keys or the access to those addresses have simply been lost.

Ms. KUSTER. My time is up and I will yield back, but just to make a plea for democracy somewhere in this process. I appreciate the Chairman for scheduling the hearing. Thank you.

The CHAIRMAN. The gentlelady yields back.

Mr. Allen, 5 minutes.

Mr. ALLEN. Thank you, Mr. Chairman, and this has been very interesting. The gig economy is moving at light speed, and the rest of us are just kind of dragging us along. But it is exciting.

I guess the problem that we are having, from a regulatory standpoint is throughout the gig economy is obviously the reason it is doing so well is because there is lots of freedom and very little regulation, but we do know that there are lots of problems, as far as connectivity, as far as security, and that sort of thing.

How do we reach a balance with this, what we are doing is we are creating another money supply here as I see it. In other words, it is global. It is a global currency. I just don't know how that works, like where we have our basis. Our dollar, I believe, kind of sets the mark for the world right now.

Explain how this is going to work across the world. I mean, you mentioned Afghanistan. I don't know what their currency base there is, but I am just going to open it up. I can't visualize how this could possibly work.

Mr. GENSLER. Can I get one real quick shot?

Mr. ALLEN. Yes.

Mr. GENSLER. Sound governments like the U.S., if we have to maintain our fiscal discipline and all the things we need to do—

Mr. ALLEN. Yes, if you can keep it, right.

Mr. GENSLER. But sound governments have certain advantages, because of the stability, and also because we allow our currency, fiat currency, it is legal tender for all debts public and private, and you can use it to pay taxes. And so there are some just natural advantages.

I think that how this might play out, I could see a country that is in distress, the Venezuela's of the world, where in the future one of these currencies will be a better thing for their public than in that—

Mr. ALLEN. For the individual citizen?

Mr. GENSLER. For the individuals, for the merchants—

Mr. ALLEN. Because they are not dealing through their government, they are dealing through this global currency?

Mr. GENSLER. Yes, I could see that.

Second, even in a stable economy like ours, that our Federal reserve, with all respect, has a little bit of competition for the payment system. We Americans spend between \$100 billion and \$200 billion a year for our payment system. That is only ½ percent to one percent of our economy, but it is still \$100 billion to \$200 billion a year. And so startups and entrepreneurs have a chance to chip away at that and get inside of that. That is competition to the commercial banks and the central bank on our payment system.

Mr. ALLEN. Other feedback? We have about 2 minutes.

Ms. BALDET. Yes, I just wanted to add to that around the Venezuela point, that there was some interesting usage of Zcash in Venezuela over the last year as a sort of bridge currency to the dollar so that citizens that could not have traditional access to get to the dollar were using a cryptocurrency as an intermediary. Given the volatility of cryptocurrency, you wouldn't necessarily want to stay there, but as a bridge and a censorship resistant bridge at that, it is somewhat important. While censorship resistance can be seen as a double-edged sword, we might not necessarily like the

way that people are doing *bad things* with the network, the ability to project into places where they also would prefer people to not be doing things should not be underestimated.

Mr. ALLEN. I can see where like a business located in a country where the government is unstable, the business community could really benefit from this.

Then you have this competition between nations, right now the biggest competition is between United States and China. The end seems to want to be the basis. Which nation would run this thing and ultimately be responsible for it?

Mr. GENSLER. See that is the thing. It is decentralized so no nation does, but you mentioned China. I don't know that there has been public reports, but there are a lot of people in the community that say that though China, the government, has said we are clamping down, the reality is there is a lot of activity. The Bitcoin, this is how it is developed. Two of the three largest mining pools are in China. The third one is in Russia, and that combined is about 50 percent of the mining pools.

But beyond that, the Bank of China is very actively engaged to do research—

Mr. ALLEN. But the government is not fond of this?

Mr. GENSLER. Well, they are of two minds.

Mr. ALLEN. Yes.

Mr. GENSLER. They say publicly they are not fond of it because their currency is not convertible, so they are worried about people running around their currency. That is the public face of it, but underneath it, they are doing a lot of work on it. The Bank of China particularly is looking at it very closely because they are worried. They want to get their payment system right and they want to use it maybe.

Mr. ALLEN. Okay.

Ms. BALDET. There is also a bit of a land grab going on when it comes to enterprise distributed ledger projects where countries, like China, can go into emerging economies and do essentially free work for them using their technology, which is impacting the adoption of specific protocols backed by various countries in those regions.

Mr. ALLEN. Okay. All right, I yield back, Mr. Chairman.

The CHAIRMAN. The gentleman yields.

Mr. ALLEN. Thank you very much.

The CHAIRMAN. Mr. Soto, 5 minutes.

Mr. SOTO. Thank you, Mr. Chairman.

Cryptocurrency, blockchain technology all have tremendous potential, and I am bullish on the prospect. But we are in a bizarre position here. Satoshi Nakamoto, an unknown person or people who developed Bitcoin, and this person or persons has 980,000 Bitcoins and an estimated worth between \$19.4 billion to \$17.9 billion. Can any of you today, and just raise your hand, verify that Mr. Satoshi Nakamoto is, in fact, a person or persons?

Ms. BALDET. I don't believe that we have all agreed that it is a male.

Mr. SOTO. All I asked—okay.

Ms. BALDET. Satoshi is female.

Mr. SOTO. Satoshi is female, great. None of you can verify who founded or owned Bitcoin is my point, which puts us in a strange

position, because normally we have industries and new currencies where we know who created it. That puts us in a weird position.

In addition, you mine to develop new currency, a process by which transactions are verified and you add it to the public ledger. You compile recent transactions into blocks and try solving computationally difficult puzzles, and you get a reward, either a transaction fee or newly released Bitcoin. I guess gold is the only thing that we could even parallel to where we have mined in such a way. Have we ever had a currency online like this where you mine via transaction algorithms and solving puzzles on the Internet?

Mr. GENSLER. That is the novel creation of—yes, somebody we don't know who she is—Satoshi Nakamoto, or he or collection. But that is the novel thing. When the Internet was created—

Mr. SOTO. My time is limited, so we have an unknown person and a bizarre way of mining Bitcoin to get it together.

I am more concerned, though, about being able to void money laundering for terrorism, drug trafficking, human trafficking, tax evasion. I would love to hear from each of you in one sentence on what we could do to stop money laundering and having Bitcoin and other cryptocurrencies be the choice of terrorists, drug traffickers, and those evading taxes. We will start from the left and go on back. One sentence, because my time is limited.

Mr. FAIRFIELD. Trust FinCEN to do their job.

Ms. BALDET. Rely on other law enforcement mechanisms that work around strong cryptography. We do not weaken roads and add potholes to them.

Mr. SOTO. That is two sentences, but thank you. My time is limited. I apologize.

Mr. KUPOR. Bitcoin is actually the worst tool to money launder because every transaction is registered and fully reportable, so it is actually law enforcement's best friend.

Mr. SOTO. Okay.

Mr. GORFINE. While the technology can be peer-to-peer, most activity takes place through a new type of intermediary where you can apply AML/KYC rules.

Mr. SOTO. Okay.

Mr. GENSLER. On top of that, rigorously require crypto-exchanges to register, and you may need to pass a law to do that, but to make sure they register and that all the AML, anti-money laundering and know your customer is being done there.

Mr. SOTO. Run-on sentence, but helpful. Thank you.

Mr. NESS. The alleged Russian hackers were caught because they used Bitcoin.

Mr. SOTO. Thank you.

I am also concerned about two practices, *spoofing* and *wash trading*. Spoofing being flooding markets with fake orders to trick other traders into buying or selling, and wash trading, which is where cheaters trade with his or herself to give a false impression of market demand that lures others to dive in, too. Can anybody give us any insight into how to stop spoofing and wash trading? We will start from the right to the left now.

Mr. NESS. That is a tough one. I don't have a good answer.

Mr. SOTO. Okay, next.

Mr. GENSLER. Register the exchanges and cops on the beat.

Mr. GORFINE. We are a markets regulator. That is something that we are able to police for within our regulated futures and swaps markets, and so worth a look at the underlying market to ensure that the right types of regulations are in place.

Mr. SOTO. And are you all doing that right now?

Mr. GORFINE. The CFTC does not have direct oversight authority over underlying markets.

Mr. SOTO. We would have to give you jurisdiction to help with spoofing and wash trading?

Mr. GORFINE. It would be something Congress would have to look at in terms of authorities.

Mr. SOTO. Okay. Next, Mr. Kupor?

Mr. KUPOR. Yes, I agree. Either between the SEC or the CFTC you would have to grant appropriate authority.

Ms. BALDET. Agree, broker dealers need to be treated like broker dealers.

Mr. FAIRFIELD. I would agree with that.

Mr. SOTO. All right, thanks, and I yield back.

The CHAIRMAN. The gentleman yields back.

Mr. Faso, 5 minutes.

Mr. FASO. Thank you, Mr. Chairman.

I am wondering if, for the benefit of our viewers at home across the country who are watching this hearing and are trying to understand the impact of the cryptocurrencies and what the future holds, if perhaps Ms. Baldet and Mr. Kupor could tell us where you think from a 5 to 10 year viewpoint where this is going to be, the role that these currencies are going to have in our economy, and how might this affect average consumers? Right now the market participants are mostly very sophisticated people. Do you see this insinuating itself into the broader economy?

Mr. KUPOR. Sure, thank you. Yes, we believe that this really is going to create a whole new set of infrastructure on which all kinds of new applications are going to be built, some of which we don't even know about today. If you think about all the benefits we have reaped from Facebook and Google and all the Internet properties—

Mr. FASO. And negatives from—

Mr. KUPOR. And negatives, too. What the beauty of this technology is, is it gives us a new set of platforms, and again, very critically those platforms are not controlled or governed by centralized corporations, they are controlled and governed by a community. And so you can imagine all the utility that we have today, but where the consumer actually has ownership of data. The consumer has the ability to actually ensure that data is shared in a manner in which they want to be shared, and a consumer can also capture the economic rents from use of that data, so we think the opportunity in that respect is endless.

Mr. FASO. Yes.

Ms. BALDET. Sure, I would say that there are two very different sides of the spectrum.

On the enterprise blockchain and distributed ledger side, we are seeing mutualization of work flow come to pass, and that is a way

for companies who trust each other to do things in a more coordinated way that drives down operating costs.

On the public side, to tag onto the gig economy statement earlier, we can see a further kind of micro-gig economy is happening wherein if people were to have more access and control over their own data—this goes for businesses as well—we might be able to monetize that in new ways.

Alternative business mechanisms to the current data hungry surveillance capitalism that we see arising from centralized companies, we might be able to challenge that kind of hegemony.

Mr. FASO. And Mr. Fairfield, you referenced personal privacy issues. How do you see that coming into play here?

Mr. FAIRFIELD. Well there are a few. The first would be if we were to follow through on the suggestion that KYC and AML, that is Know Your Customer and Anti-Money Laundering, requirements be imposed on many more actors in this space. The initial reaction of many people who held cryptocurrency was that they did not particularly want those data revealed, and they built products to try to keep that data from being revealed.

At least as far as the major exchanges, and I have heard exchanges used a few different ways today, but here I am talking about the way you onboard. You spend dollars, you get Bitcoin, for example.

I think that giving those exchanges the requirement under the Bank Secrecy Act to have KYC and AML requirements at the same time that they have fairly strict financial privacy requirements was a moderately decent fit. For national security purposes, we need to know when people can make a couple million dollars disappear in one country and reappear in another. But at the same time, there is some degree of constraint over where that information can go once it is kept within financial institutions. That is a good example of a mix that seems to work, and maybe that would be a model we could spread out from.

Mr. FASO. And just generally, Mr. Gensler or Mr. Gorfine, as we look at the development of this, it does seem that there is an issue that is going to affect government, which is right now we know, because we have a paper trail, we have electronic trails and documentation of transactions for which taxation applies, for which government oversight and reporting applies. How does government address this from the standpoint of its interest to try to make sure that taxation and other compliance issues are resolved that currently, with our existing financial transactions we have mechanisms to have that reporting?

Mr. GENSLER. It is really about knowing all the accounts. This technology has what is called public keys and private keys and Zcash, which Ms. Baldet is involved in is even more secret than that, but it is really knowing who owns the accounts behind that. It is know your customer, beneficial ownership, and then trying to do that through some of the central mechanisms like crypto-exchanges.

It is not going to be perfect. This is going to be like a whack-a-mole, the IRS and the CFTC will work hard and then 3 years from now the technologists will have a new way to get around it.

Mr. FASO. Mr. Chairman, could Mr. Gorfine respond to that as well?

The CHAIRMAN. Yes, very quickly.

Mr. GORFINE. Yes, if I may. One observation, too, is remember the most anonymous form of transaction is actual cash, right, people transacting cash. There is very little record of that taking place. Most virtual currencies, cryptocurrencies, are pseudonymous, so there is actually the ledger, which is a fairly transparent mechanism to be able to pursue potential law enforcement, as well as AML and KYC, so I just want to point that out, but it is something that needs to be figured out by government.

Mr. FASO. Thank you, Mr. Chairman.

The CHAIRMAN. Mr. LaMalfa, 5 minutes.

Mr. LAMALFA. Thank you, Mr. Chairman. I am a little sorry I missed part of this hearing here, but it might be—well, I am a flip phone guy in a Bitcoin world anyhow, there is no pretense here.

But, Mr. Ness, I come from the flip phone part of NorCal, as you say down there in the Bay area. I will ask a question and I will try and narrow down to, it was talked about earlier in the Committee about crypto-networks and the Internet protocols on tokens, so would you touch upon what it would look like if that token is determined to be a security? Can you hit that for us?

Mr. NESS. Yes. The issue really comes down to friction, and while we can get to a status of free trading securities by registering them, even when you do get to that status, there are all sorts of ancillary friction in and around the transfer of a security. You need to have broker dealers involved, and you need to have suitability requirements met, and other potential disclosure issues and so forth that are ongoing.

And so when we are talking about trying to create the next generation of decentralized protocol layer kind of apps on top that are all interoperable and interacting with each other and transferring value at the speed of software to deliver a service to a consumer. It may be all transparent to the consumer. This is all happening under the hood, but you can't have fundamentally the transfer of value at the speed of software if it is a security.

Mr. LAMALFA. You are talking with the middle man of a typical financial institution, right?

Mr. NESS. That is right.

Mr. LAMALFA. All right, and again, please touch on the importance of increasing the access to the speediness of those types of transactions. Why is that important?

Mr. NESS. Well, to get a little philosophical, ledger technology is fundamental to commerce, right, and double entry accounting was an amazing innovation in ledger technology that pulled Europe out of the Dark Ages. And the same thing can happen in an amazingly more robust way when we start to literally not just allow parties to trust each other through standard mechanisms of reconciliation, but when we remove the reconciliation or the need for it altogether, and that is simply a philosophical point of view, I suppose, but it goes to this issue that we are at early stages of this. We don't know where it is going to go, but speed is probably a good thing.

Mr. GENSLER. Can I just say, I am an optimist. I agree with what Mr. Ness says, but maybe it is the MIT in me now. I think

that the beneficial ownerships will be able to be tracked in a matter of milliseconds and nanoseconds. Not yet, it might take 5 years, but we will get there. Technology is pretty neat, how it grows and helps us.

Mr. LAMALFA. Well, it is amazing. Thank you, and Mr. Chairman, at the risk of looking senatorial at a Zuckerberg hearing, I am going to yield the rest of my time.

The CHAIRMAN. Thank you, Mr. LaMalfa.

Ms. Plaskett, 5 minutes.

Ms. PLASKETT. Good morning, gentlemen and gentlewoman. Thank you all for being here.

Of course, this is something that we are all really learning about. I try and say that I am woke, but you know, that always doesn't work and this is one area where my 20+ year old children would find me really out of date. I am happy, Mr. Chairman, that we are having this because you all are correct. There is a balance, right? We don't want to over-restrict something that we don't even really understand or that is still developing, but at the same time, ensuring that that development, while it is developing, bad actors are not utilizing and gaming the system so that really terrible things can go on.

One of the main things that I am concerned about, people think of the Virgin Islands as really just being a beautiful paradise, but we have an enormous amount of drug trafficking that goes through the Virgin Islands, and we also, along with other Caribbean islands—other islands more so than ours—have the ability to be used as a filter for hiding money, and particularly ill-gotten gains. And so I was wondering if anyone on the panel can really talk about how we can or law enforcement can really act as a deterrent for the use of Bitcoins, the marriage now between Bitcoins and blockchain to be able to really accelerate the use of these types of currencies in a manner that does not cause individuals in other places to really take advantage of this.

Mr. GENSLER. It is ultimately a bit of an arms race because technology is new—

Ms. PLASKETT. I love it. We are having an arms race with electronic money, right?

Mr. GENSLER. We are, we are. But the arms race in this is basically against societal norms and bad actors. There is always going to be crime and technology is just a new way to do it.

One thing that the panel has all said is Bitcoin actually is more traceable than the public thinks. It is not anonymous. It is what is called pseudonymous, but we need ways to connect those public keys, which are like 24 or 32 digits to real people and real companies, and that is why I have recommended you need to have gatekeepers or gateways to do that, the exchanges, the crypto-exchanges or one set of gateways for law enforcement then to track the way that law enforcement now uses banks to track things. That would be one way I would say.

Ms. PLASKETT. Right. I saw some others wanted to respond.

Mr. FAIRFIELD. If I could also respond.

The way we catch criminals often is through traffic analysis. Blockchains are quite good sources for traffic analysis.

Ms. PLASKETT. Yes.

Mr. FAIRFIELD. There are—

Ms. PLASKETT. Can you tell me, how does the blockchain facilitate that?

Mr. FAIRFIELD. Sure. One thing to do would be to go online and simply Google the blockchain.

Ms. PLASKETT. Right.

Mr. FAIRFIELD. You will find a website that will list each transaction as it comes across, and if you spend 30 seconds watching every transaction in the world that happens in blockchain and you think to yourself if I were a police officer, I would find this flow of money around the world very interesting. We also have computer programs, though, that don't require a person sit there but can comb these databases, find patterns, and kick bad patterns up to somebody to take a look at it.

There are ways of circumventing this. Blockchains are pseudonymous. I don't put too much stock in it because tumblers and dark wallets can essentially—you and I might agree I will pay your debts, you pay mine, that way your debts aren't traceable to you and my debts aren't traceable to me. That is essentially what a tumbler does. We pay each other's debts, and so we hide where the money is coming from.

Ms. PLASKETT. Right.

Mr. FAIRFIELD. But, with traffic analysis and standard artificial intelligence runs combing across the database, we can do a pretty good job of kicking up where bad actors are stirring the water.

Ms. PLASKETT. Mr. Gorfine, we talk about law enforcement doing this. All of us here are concerned with what is our role. What do you see CFTC in dealing with this as well?

Mr. GORFINE. Yes, and I want to kind of step back and compliment the way you framed this initial set of questions because it is exactly right that when I mentioned earlier in my testimony about thinking about principles and making sure we are giving—you can regulate based on principles, and then as you identify areas where there are particular harms to solve for, that is where more prescriptive rules might fit in. Certainly, in this area of anti-money laundering and know your customer, that is an area where you would want to make sure you are enforcing rules.

But to your more specific question, the CFTC has now had a lot of experience dealing with some of these markets and the technologies, but again, our role is as a primary regulator of futures and swaps markets, and then we do have that enforcement authority that is a look-back authority to police for fraud and manipulation, either in our futures and swaps markets or in the underlying market as well.

But because of our experience, we have a lot to offer at this stage in terms of informing the discussion around this space, given our enforcement experience, the role of our division and market and oversight in regulating the actual exchanges, monitoring some of the clearing and risk issues associated with cryptocurrencies, customer education, and then LabCFTC outreach. I think we are playing a very important role, and then hopefully can help inform these efforts.

Ms. PLASKETT. Thank you, and I yield back. I just want to make sure that the regulations that we are doing, while we give time for

this to grow, we also make sure we don't end up like Facebook where it has outpaced us in terms of being able to do damage in the general good.

The CHAIRMAN. The gentelady's time has expired.

Mr. Davis?

Mr. DAVIS. Thank you, Mr. Chairman.

Mr. Gorfine, I am going to go right back to you. Obviously we have talked a lot about jurisdictional issues and how to set up the proper regulatory structure that many in the industry are asking us to do. Obviously, with many of the commodities and different products, we have an SEC portion that is regulated in many cases, and then we have the CFTC which falls under our jurisdiction, and you get to see some of the humorous anecdotes from Members of Congress here who I am sure have had similar things to say when that new thing the Internet was taking place, and how are you ever going to buy things off of the Internet? Well Jeff Bezos showed us very well that anyone can do that now. And as cryptocurrencies continue to grow in usage, they are going to become less and less intriguing and more and more used.

I am going to get into the demographics of many of the crypto-users, but I am want to ask you a quick question, sir. Based on the way current law is written, it is not cut and dry whether cryptocurrency should be regulated by the SEC or the CFTC. If Congress attempts to come up with a workable definition for *cryptocurrencies* that are more similar to commodities, call them, as we have heard, blockchain commodities, what should we be looking to guide us?

Mr. GORFINE. Yes, thank you for the question. You know what? The one thing I would say is, and I mentioned this in my opening statement, that it is important that we are not hasty in terms of figuring out what the right contours are of applying securities laws and then the commodities framework. I do think that the SEC has in due course been providing additional clarity. Mr. Hinman over at the SEC gave a well-received speech outlining some of the SEC's thinking as to how they would apply the securities law framework, and some of the things that you have heard are factors around decentralization, are there expectations of return based on meaningful work of others? These are important elements that, of course, I am not saying that these are the only elements, but these are some of the things that you start to look at in terms of figuring out well, when does it make sense to be applying the securities laws framework that includes things like required disclosures, it requires regulations around the offering of securities and the intermediaries involved in securities, and when does that perhaps not fit the product?

This discussion is ongoing, and in due course and being thoughtful, you are starting to see additional clarity and certainty coming out. But certainly those are some of the factors that we have heard talked about a fair amount.

Mr. DAVIS. Thank you.

Ms. Baldet and Mr. Kupor, and I am sorry I wasn't here at the beginning of the hearing so if I mispronounced a name, forgive me. I always try to mispronounce my colleague, Ted's, on purpose, but not yours.

Now Ms. Baldet, this is an industry that you are getting into in the infancy, and you have actually done something that we don't see a lot around here. You have come to us to actually ask for a stricter regulatory environment to stop some of the fraud and abuse that was mentioned by some of my other colleagues today.

But I want to ask for those of you who are in this business, what demographic usually utilizes Bitcoin here in the United States, what age?

Ms. BALDET. It is pseudonymous, so—

Mr. DAVIS. What—

Ms. BALDET. Based on Twitter, it is probably people in their 20s to 40s.

Mr. DAVIS. The millennials?

Ms. BALDET. It is millennials.

Mr. KUPOR. Institutionally there is a very different skew towards the size of transactions and the types of people that are playing and the larger dollar values. And there is a developing institutional market as well, right, so yes, it started there, but if you look at some of the major financial institutions, there are institutional markets and large private equity groups that are heavily transacting in this as well.

Ms. BALDET. Yes, and to tie on to the last question, but also the concern about regulatory framework. What I was mentioning is about a need for more clarity, not so much the bright lines that we are talking about security *versus* commodity as much as more interest in safe harbors for innovators, especially because we are seeing the market adapt to this in that new disruptors are at an advantage *versus* incumbent institutions who are waiting for regulatory clarity to engage. And so in a way, in absence of that, it is not necessarily that incumbents are incapable of innovating or they don't understand the technology, but they have to take a sidelines approach because they have traditional businesses to lose.

Mr. DAVIS. Well thank you, and Mr. Chairman, my time is about ready to expire, but we want to make sure that we devise a regulatory structure that allows this industry to continue to grow, but allows us to address many of the law enforcement problems that have been brought up here by many of my colleagues.

I can't wait to continue to work with you. Thanks for your time.

The CHAIRMAN. Mr. Yoho for 5 minutes.

Mr. YOHO. Thank you, Mr. Chairman. I appreciate you all having the patience to be here. This is something that is really confusing to me. My wife and I, we watched a documentary on Bitcoins and when we were done, we were more confused. I have not invested in any, as you asked.

With that said, Mr. Gensler, in your testimony you mentioned recent SEC staff determination that Ether is not a security, although it might have been at its issuance. If the SEC had determined Ether was a security in 2015, what regulatory requirements would Ether be subject to today? And I have two follow-ups, and anybody else that wants to weigh in on this.

Mr. GENSLER. If they had determined that way back in 2015, at the time they would have had to give some full and fair disclosure. The SEC at that time would have probably said, "Well, it is probably not 3 years of financials and things like that because it was

a new startup,” and this is something the SEC is grappling with even now for current initial coin offerings. What is full and fair disclosure? Director Hinman at the SEC said it right. It is about information asymmetry. Give an investor enough information so they can take the risk. It is not a nanny government. The investors can take the risk as long as they get enough information.

Mr. YOHO. Okay, and how might such a regulatory regime affect the functionality of the Ethereum network?

Mr. GENSLER. Mr. Ness raised this question earlier. There is friction right now because we don't have the beneficial ownership. Securities laws say we have to have full and fair disclosure and we have to keep track of anybody who owns the security. It is that second one that is the friction Mr. Ness mentioned. I am an optimist. I think technology can solve for this. It is not going to be in 2018. It would slow down some of these token economies, but I believe that it is important to track beneficial ownership for all the reasons about illicit activity and taxing.

Mr. YOHO. I agree with that. Anybody else?

Ms. BALDET. At the risk of confusing you more about Ethereum—

Mr. YOHO. I was going to say, that name Ethereum is apropos because it is just out there.

Ms. BALDET. In the Ether, yes.

Mr. YOHO. It is like where is it?

Ms. BALDET. Yes. Whereas some systems like Bitcoin were initially meant for peer-to-peer value transfer, the Ethereum network does, well it is more like a distributed world computer, in a way. Don't think about it too much. But what you can do is you can use the native token of the system, this Ether, which may or may not have been a security issuance as you mentioned, to pay for what is called gas in that network. And that gas is used to buy computational cycles on a shared computer. If something like gas ends up looking a lot like a security, that is generating PNL just as you are running a general computer, it would be incredibly cumbersome, if not impossible, for normal humans to figure out what their balance sheet should look like. We need to be careful in not just applying a one size fits all solution on that.

Mr. YOHO. Well, the important thing is that we don't want to stifle the imagination, the entrepreneurship, the development of this, but yet we want to have the safeguards in place. Whether it is the CFTC or the SEC, we just want to make sure that when people get involved in it, that their monies or their investments are protected.

You were going to add something?

Mr. FAIRFIELD. I was going to make a rough analogy. Because these are databases, it is like the database in your computer, and applying securities regulation to these databases would have the same impact as having the SEC regulate your computer at the internal level, which is just simply going to gum up the works.

Mr. YOHO. Right. We don't want that, but I mean, we want the safeguards there.

My other question is, and I sit on the Foreign Affairs Committee, and we deal a lot with North Korea and the sanctions and all that, and we see countries changing companies, funneling money, break-

ing sanctions or skirting sanctions, and a lot of we see is being done over electronic currency like this.

What are the safeguards that you guys can help us with on that so that we can follow it? When that cash transfers, it is easier to track that. We can block and sanction those banks or those entities, but when they are transferring things like this or any other nefarious activity, drug deals and things like that, what are the safeguards that you guys can put in place that we know we can follow that stuff?

Mr. KUPOR. We talked a little bit about this earlier, but the idea behind these networks is all the transactions are, in fact, traceable and immutable, and so in fact, in most cases that you have seen, for example, in the recent Russian hacking investigation, they really create a trail and a presence that actually really is a data mine for, in many respects, law enforcement. If you fast forward a few years, this will look, in many respects, like GPS and cell phones have become for law enforcement as well, which is it really creates an immutable record that—

Mr. YOHO. I appreciate your time. I am out of my time, and thank you, Mr. Chairman.

The CHAIRMAN. Well I want to thank the panel.

Mr. Gorfine, you may have to slip out to catch a plane, but I would like to give each of you probably no more than a minute for any closing comments you think you wish you would have said during your opening or a question that didn't get asked that you thought would be helpful for the record to have it.

So we will start with Mr. Fairfield. Any closing comment quickly?

Mr. FAIRFIELD. Only that it is a wonderful idea to begin with these kinds of conversations because it is here that we are able to look at the different communities that are using the technology in different ways, and perhaps craft legislation or other rules that will permit us to not only capture the bad guys, not only get them cleaned out of the system, but to leave intact what is good behind.

Ms. BALDET. Sure. Thank you for having me.

I would say that it is certainly important that we are having these conversations and moving towards some right-sized frameworks. At the same time, and possibly this is just our general American sensibility. We are focusing on the private-sector kind of business. How does this look like a business? How does this look like a financial system angle, whereas there is a whole other conversation to be had about what does this look like if it becomes systemic infrastructure similar to the Internet, and what does that mean globally?

At the same time, it should not be an either/or conversation. We need to be thinking about how rather than just defensively we regulate, how we can proactively make sure that we are frontline innovators in the way that we were for the Internet as well globally.

Mr. KUPOR. Yes, I just want to echo a little bit, Mr. Yoho, what you said, which is to be very clear, I speak for myself. None of us are suggesting here that there shouldn't be appropriate regulation in this market. There is actually a very good framework between definitions of *security laws* that apply to the SEC, and then things

that actually, rightly so look more like commodities. There is also FinCEN as we have talked about, right, in terms of KYC and AML, so there is quite a patchwork out there, certainly in our business were we sit, a lot of what we are seeking is, quite frankly, just regulatory clarity so that we ensure that companies who are good actors actually understand what the rules of the road are, and we fully support, obviously, the activity that the SEC and CFTC and others are doing to make sure that the bad actors are rooted out of the system.

Mr. GORFINE. Yes, thank you. I just want to thank the Committee for taking an interest in this area and allowing us and the CFTC to help inform and support the effort to strike the right balance. It is a promising and very new area of innovation that, as I said earlier, we don't know where a lot of these different threads will lead. But it is important for us to be vigilant and make sure that we are targeting bad actors and making sure there are appropriate guardrails in place, and that we have an efficient, effective regulatory framework in place and look forward to helping support that effort.

Mr. GENSLER. First, it is just so good to be with you, Mr. Chairman, and this Committee again after 5 years.

Two, promoting innovation and promoting competition means also bringing this inside the public policy sphere. I don't think they compete. I think it is together. If you recall, in this Committee that there is the issuer-based crypto, which is kind of the SEC and these ICOs. There is derivative crypto, which the CFTC has but it is going to have some challenges. And then there is the whole cash commodity crypto, which is 70 percent of this world. That is where Congress has a role, a real role to think about is there more authorities?

I say incumbents *versus* startups. Startups feel that they can beg for forgiveness after they mess up with the law enforcement. Incumbents feel they have to ask for permission. And so right now there is an imbalance right now where incumbents aren't in this space and startups are, and you might want to address that. MIT and I are available any time if you need any help on any of this.

Thank you.

Mr. NESS. I guess I will echo that. I think probably Uber taught us all that for better or for worse, if you build something that is incredibly popular, the laws will change to conform to that new technology.

Technology is moving at a very, very fast pace. We have heard today about some of the pitfalls of these new technologies that get out ahead of the legislators, and so I want to compliment you guys for being on top of this, and the SEC as well has been incredibly on top of it and working closely with us and open to dialogue, and that is what is really needed is a kind of free flow of information and communication between those of us who are on the frontlines dealing with the day-to-day fact patterns and you guys who need to think about the actual policymaking aspects.

The CHAIRMAN. Well thank you. It has been a terrific couple of hours. It was well spent for us. I hope you consider it the same. You clearly elucidated some issues, not only just with regulation of these issues, but also the tangential impact of taxable transactions

being captured in a way that folks can comply with our Tax Code and the revenues there, the law enforcement piece. Ms. Baldet, you may be involved with a group that is trying to find a way to create a currency that is not pseudonymous but would be anonymous. That is what innovators do is they see something that needs to get changed, and they will do that. And so that just speaks to how dynamic the process is. As long as the stupid criminals keep using Bitcoin would be great, but then the smart ones will pivot to something that allows them to hide better behind that.

It has been a terrific eye-opening session, and will not be the last because our folks at the CFTC who are our partners in making this happen, and their partners at the SEC really want to do the same thing, and that is regulate where it needs to and give the certainty so that the incumbents don't have to worry about asking for permission while the innovators are asking for forgiveness. That is an unlevel playing field. And we also want this action going on within the United States.

Thank you all very much. Under the Rules of the Committee, the record of today's hearing will remain open for 10 calendar days to receive additional material and supplementary written responses from the witnesses to any question posed by a Member.

This hearing of the Committee on Agriculture is adjourned. Thank you all.

[Whereupon, at 12:03 p.m., the Committee was adjourned.]

[Material submitted for inclusion in the record follows:]

SUBMITTED QUESTIONS

Response from Amber Baldet, Co-Founder and Chief Executive Officer, Clovyr*

Submitted Questions by Hon. Vicky Hartzler, a Representative in Congress from Missouri

Question 1. Illicit Activity—Over the past few years, one of the things that’s caused me and my constituents a great deal of concern is the rise of illicit activities being facilitated by the dark web, such as drug and sex trafficking. Congress is continuing to address the opioid epidemic, and I’ve turned my attention to sex trafficking as well. Last year, I sponsored a bill, known as the Empowering Law Enforcement to Fight Sex Trafficking Demand Act, that passed the House to address this issue.

Ms. Baldet, Mr. Gensler brought up the use of certain cryptocurrencies to purchase illegal goods and facilitate criminal activity. As you sit on the board of the Zcash Foundation, which is a non-for-profit dedicated to enhancing financial privacy, I’d like to get your perspective on how we can fight against illegal activities being facilitated through cryptocurrency.

How should we weigh the value of financial privacy against the value of law enforcement access to financial information?

Answer.

Question 2. Is it possible to have a truly anonymous cryptocurrency and still protecting against bad actors using it to launder money, purchase illegal goods, or evade taxes, or does the public have to choose one or the other?

Answer.

Response from Daniel Gorfine, J.D., Director and Chief Innovation Officer, LabCFTC, Commodity Futures Trading Commission

Submitted Questions by Hon. John J. Faso, a Representative in Congress from New York

Question 1. Commissioner Brian Quintenz has stated that a virtual currency can start as a security and become a commodity. What is that transition point in your mind?

Answer. The Securities and Exchange Commission (SEC) interprets and applies the securities laws, and has been providing further guidance on how it would apply the “*Howey Test*” to crypto-asset offerings. To the extent that a crypto-asset is a security, the CFTC would generally not exercise regulatory authority over the instrument.

Within the above context, it is conceivable that an enterprise would seek to raise capital through an investment contract and help to build a decentralized network predicated on a crypto-coin or token that takes on attributes similar to Bitcoin or Ether. In this case, the crypto-coin or token may be a commodity, akin to oranges or Bitcoin, while the initial investment contract is deemed a security. Of course, whether a particular offering or crypto-asset is a security or commodity is subject to a facts and circumstances legal test and accordingly is highly dependent on the details of the offering.

Question 2. In the hearing you cited SEC Director Hinman’s comments on decentralization. At what point are a central actor’s efforts no longer key to the success of an enterprise, or sufficiently decentralized, to no longer be classified as a security?

Answer. I defer to the proper jurisdiction of the SEC in determining the outer boundaries of the securities laws, but given our ongoing collaboration with the SEC and observation of its public comments the factors of decentralization, control, public expectations of profits from ongoing work of others, information asymmetries, and crypto-asset use cases all appear to be relevant to the analysis. Again, the securities and commodities laws are subject to facts and circumstances tests that eschew over-simplified definitions in order to accommodate evolving markets and offerings.

With respect to decentralization, one might consider how many nonaffiliated individuals or entities contribute to the success of the network and whether the network remains significantly reliant on a founding team of creators or developers. As crypto-asset fact patterns continue to evolve, we at the CFTC will strive to continue providing clarity to market participants, as appropriate.

Question 3. How many independent users confirming transactions or changes to a blockchain are sufficient for effective decentralization?

* There was no response from the witness by the time this hearing was published.

Answer. I do not believe a bright-line number of users or transactions should be dispositive as to the classification of a crypto-asset. Instead, the CFTC utilizes a facts and circumstances test in determining application of the CEA. To be sure, the number of users confirming transactions and breadth of participation are likely relevant to such a test, but not dispositive. As noted above, a relevant consideration may be whether the network remains significantly reliant on the work or efforts of a core team or group of developers as compared to gaining such widespread adoption that it can continue to run largely autonomously.

